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ABSTRACT

A survey conducted at the Hong Kong Baptist College gathered information about first-year remedial reading instruction in English as a second language (ESL). The study focused on the kinds and purposes of reading assignments, the levels of cognitive processes related to reading assignments, the cognitive ability levels of weak students, the cognitive process levels to be reinforced in ESL remedial reading, and implications for change in the reading program. Results showed that a substantial percentage of students, 21%, were regarded by their teachers as weak, with deficiencies in the four lower levels of Bloom's Taxonomy of Educational Objectives in the cognitive domain (knowledge, comprehension, application, and analysis), which were also the most required skills. It is suggested that English language teachers could reinforce the needed cognitive skills in reading programs by means of a cognitively oriented approach, using schema theory with an interactive, top-down, bottom-up processing model, complemented by cognitive skills training through questioning. A sample text, schema, and questions are provided. (Author/MSE)

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Cognition and Comprehension:
A Study of the Need for Incorporation of Bloom's Taxonomy of Educational Objectives in English as a Second Language Remedial Reading Programmes

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A Thesis
Submitted to the Division of English
of the Graduate School
of the Chinese University of Hong Kong

In Partial Fulfillment
of the Requirements for the Degree of
Master of Philosophy

BEST COPY AVAILABLE

By

Barbara Wei-hao Shen Costin

July, 1986

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ABSTRACT

A questionnaire survey was conducted at a tertiary level educational institution, the Hong Kong Baptist College, among first year course lecturers to discover the reading requirements in their courses. In particular, the cognitive skills required by the lecturers and the performance levels of the weak students in the lecturers' classes were surveyed. Bloom's Taxonomy of Educational Objectives - Cognitive Domain was used as the basis of inquiry in the questionnaire and in a case study of first year course lecturers in the sociology department. A past reading programme was also analyzed with these concerns in mind.

A substantial percentage of the students, 21%, were regarded as weak. They were considered to have deficiencies in the four lower levels of Bloom's Taxonomy (knowledge, comprehension, application and analysis), which were the most required cognitive skills. The previous reading programme taught only a few of these skills. It is suggested that English language teachers could reinforce the needed cognitive skills in reading programmes by means of a cognitively oriented approach, using schema theory with an interactive top-down, bottom-up processing model, complemented by cognitive skills training through questioning. A sample text, schema, and questions are given.

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Chapter 1

Introduction

In the past two decades, the teaching of English as a second language has received much attention in both the study of teaching methodology and the application of research, yet there has often been dissatisfaction with the success of these efforts. Where English must be used fairly extensively in countries with other first languages, some of the language learners are not able to comprehend or produce English satisfactorily. This is especially true at tertiary level where there is heavy dependence on English as the medium for learning academic disciplines. A major problem is in reading academic texts which are an important means of conveying the concepts of the disciplines to the students. Students of English as a second language do not always comprehend the academic texts assigned to them to read and thus do not succeed in their academic studies. While English language teachers may perceive the situation, a problem for them is a lack of data on the actual requirements which major discipline lecturers impose upon their students. In assigning reading in academic texts, lecturers are expecting students to use certain cognitive processes in order to produce the result required by the assignment. If data on the requirements were available, it would be possible to identify the areas in which students are unsuccessful.

It has been suggested by many researchers that students of English as a second language are often unsuccessful because they are taught language forms only. More than language forms, thinking skills related to approaching the text as a whole are essential. Ideas have been suggested concerning text linguistics (Beaugrande and Dressler 1981), strategies in comprehending discourse (van Dijk and Kintsch 1983), schema theory (Anderson 1977; Rumelhart 1980), and cognition for academic study as being distinct from language (Cummins 1980). It has been stated in common by these researchers that the meaning is not only found in the text, that reading comprehension is not a simple process of decoding. Instead, the reader must bring to a text, world knowledge, ability to understand implicit meaning, and, most important, cognitive skills in approaching a text. The researchers indicate that traditional teaching of grammar is insufficient for English as a second language teaching and that the skills of students must be enhanced by other methods.

Exactly what skills students need in order to meet the standards required by their disciplines at tertiary level must be discovered in order to be able to make changes in teaching methods and curriculum development of English as a second language programmes, especially in remedial reading programmes where the deficiencies are great. Among the various means used to assess the required skills have been surveys of teachers and students in tertiary education. A survey of faculty opinion concerning English language needs revealed that reading skills were most important. The results were applied to students of English as a second language (Johns 1981). A survey of students of English as a second language indicated that an important need was the ability to read academic texts (Ostler 1980). The use of the survey method can be revealing and helpful in understanding necessary skills for tertiary level English as a second language students.

Most of the studies cited above have been done in countries where the major language is English. The situation in the foreign language setting may vary significantly, as to the amount of English used in the environment and the dependence on English as the means of conveying information. Hong Kong has Cantonese as its major language, but an additional official government language is English which is used in all government documents. Since Hong Kong is a business and financial centre of Southeast Asia, English is commonly used in correspondence and documents. English communication media exist side by side with Cantonese ones, making English freely available in the environment. However, English media are not often used without Cantonese translation because of the low standard of English among the general population.

In education, the English as a second language situation in Hong Kong[1], if not unique, is somewhat unusual. Students at tertiary level have spent at least thirteen years studying English: six years at primary level as a foreign language and seven years at secondary level as the medium of instruction. Yet these students often do not have a good grasp of the language in any of the four skills, particularly reading which is the essential skill in obtaining information. The students' lack of ability, however, is not surprising when it is realized that use of the English medium has generally meant only reading and writing in English, but with the teacher's oral presentation and student participation mainly in Cantonese with English technical terms interspersed (Siu 1979). Thus, discussion of reading materials and analysis of them have not taken place in English. As a result, students at tertiary level who are asked to work at a high level often have deficiencies in English language ability, particularly reading. Since tertiary level study involves reading several types of materials in one or more disciplines, reading is an area which requires a high level of English languages skills.

As higher level English language skills undoubtedly involve skills related to treating a text as a whole, cognitive skills must be considered. Bloom's Taxonomy of Educational Objectives - Cognitive Domain was selected as the model for inquiry. Bloom's Taxonomy draws together in a hierarchical form, ideas now used in text analysis, discourse comprehension, and cognitive psychology. Bloom postulates six levels of cognitive skills: knowledge, comprehension, application, analysis, synthesis, evaluation. Although the hierarchical aspect has only been marginally validated (Hill and McGaw 1981), in practice, it is generally accepted as being hierarchical (Adams-Smith 1986). Bloom's Taxonomy was constructed to cover all disciplines, a notion which offers considerable attraction for a study like this, where many subject disciplines are involved. Unlike Piaget's formal operational period[2] and Gagne's learning types[3], Bloom's Taxonomy is readily comprehended and assimilated, and easily finds concurrence among educators. It thus was suitable as the model for the study.

The impetus for this study came from an English as a second language remedial reading programme where it became evident that a serious mismatch existed between what was being taught and what students actually needed. Although efforts were made in the programme to transfer skills learned on easier materials to academic level texts, it was found that transfer was not occurring (for example, in speed reading and locating the main idea). Moreover, when using the same text, the levels of questions asked by lecturers in the subject disciplines were higher than those used in the remedial reading programme.

From this programme, it could be seen that the remedial reading students' needs were not being met and that the lecturers of subject disciplines demanded much higher levels of cognitive or thought processing. It then seemed necessary to discover the cognitive skills required by different disciplines at tertiary level. If the different disciplines had varying requirements, English as a second language teachers would have to consider differential approaches and curricula for these disciplines. Cognitive skills or thought processes could be quite different in several disciplines. Moreover, of particular interest in this study are the remedial or weak students who have needs in both English language and cognitive skills. If evidence were obtained, it might be found that teaching remedial reading may most successfully combine language and cognitive skills.

Statement of the Problem

Hong Kong students at tertiary level must read English language materials as the source of most of their knowledge and the basis for their thought processes in each discipline. The exact cognitive processes needed in tertiary study and the ones which students lack could be discovered by investigating the requirements and opinions of lecturers in the subject disciplines. If a need were to be demonstrated, English language teachers at remedial level could additionally reinforce cognitive processes in using English, processes which are being taught in the subject disciplines.

Purpose of the Study

In order to study the problem and find possible solutions to it, a research design was developed with a number of purposes.

The purposes of this study are:

1. To ascertain the kinds and purposes of reading assignments as stated by lecturers.
2. To learn the levels of cognitive processes related to reading assignments as stated in first year subject specialties for satisfactory achievement.
3. To find out the levels of weak students' cognitive abilities in the opinion of lecturers.
4. To discern the levels of cognitive processes needed to be reinforced in English as a second language remedial reading programmes in order to give students maximum help in dealing with requirements related to English language materials.
5. To consider whether any changes in curriculum are indicated by the information obtained and how they might be implemented.

Procedures

The purposes were carried out by asking the faculty members their views in a questionnaire and in case study interviews. A faculty-wide survey was conducted by means of a questionnaire which used Bloom's Taxonomy as the basis of the questions on cognitive skills in reading. As English language classes are regularly taught to first year students, the lecturers canvassed were first year subject teachers. Following the return of the questionnaires, a case study was done of the lecturers of one representative department. The purpose of the case study was to discuss the questionnaire answers in greater depth and to focus on lecturers' means of evaluating the students' performance on reading related requirements. Reference was also made to the syllabus of a past remedial reading class to ascertain the cognitive skills which had been taught.

Significance of the Study

The question of whether or not English teachers in an English as a second language tertiary level situation can help by teaching cognitive skills in addition to language forms in reading English texts has not been studied in the Hong Kong setting. Since concern exists over students' English language ability, information on alternatives for English language teaching would add to knowledge of the local situation. With some students being considered academically weak, the English language teacher might be able to make an additional contribution to students' progress by supplementing the teaching of cognitive processes already being taught by lecturers in the subject disciplines, and by emphasizing the cognitive processes in English.

While it may be felt that the question being investigated is a broad one, this study may be considered the initial phase in which the lecturers' requirements and their estimates of their weak students' deficiencies can be studied. At a later time, studies of students' perceptions of requirements and students' actual cognitive abilities could be undertaken as a second phase in order to answer this question more fully. Nonetheless, by discovering the lecturers' estimates of the deficiencies in weak students' cognitive abilities, English language teachers would be informed of areas which might be included in new curricula. More important, it could be suggested by the findings of this study that the scope of English as a second language teaching may be enlarged and refocused.

Notes to Chapter 1

1 The term 'English as a second language' is used throughout this study despite the disagreement on whether Hong Kong has a second language (ESL) or foreign language (EFL) situation. The English Language Advisor to the Hong Kong Education Department, Mr. Ray Tongue, stated that 'the situation is one of "English as a foreign language" with "English as a second language" expectations.' (quoted in Cheng 1981).

2. Piaget was not selected because of the difficulty of his theories and the fact that he did not discuss reading which would make application of his theories to reading very difficult (Downing and Leong 1982).

3. Gagne was not selected because his learning types were broad in scope and non-specific. Some of his types are concept learning, rule learning, and problem solving. He also included stimulus - response and is oriented to the behaviourist school (Snelbecker 1974).

Chapter 2

Literature Review

This study is based on the assumed connection between reading and cognitive skills and suggests how the connection can be used to improve the understanding of English language reading materials by Hong Kong tertiary students. The review of literature covers two main areas; the first one, General Background, includes Language and Thought, Theories of Reading in Psychology and Linguistics, Literacy and English for Specific Purposes. The second area, Special Areas Directly Related to This Study includes Cognitive Processes in Reading, Schema Theory and Reading, Applications of Schema Theory to Reading, Experiments with Schema Theory with Native Speakers and with Non-native Speakers of English, Threshold Levels and Cognitive Skills, Language Across the Curriculum, Applications of Bloom's Taxonomy, and Needs Assessments.

I. General Background

A. Language and Thought

In this chapter, initially, important figures in psychology and linguistics are shown to have agreed that language and thought are indispensable to each other.

Among cognitive psychologists, Vygotsky (1962) was firm in his belief that the two are inseparable.

> The process [of concept formation] cannot, however, be reduced to association, attention, imagery, inference, or determining tendencies. They are all indispensable, but they are insufficient without the use of the sign, or word, as the means by which we direct our mental operations, control their course, and channel them toward the solution of the problem confronting us. (p.58)

It is well-known that Piaget in experiments in his theory of stages of cognitive development used objects and manipulation of the objects with few, if any, words. Yet, in judging the reasoning ability of children, he used language as his major method of experimentation. (Piaget 1928) His statements on language and thought processes are thus rather interesting.

> The role of education and language is clearly fundamental, but once again it is subordinated to assimilation. There can be no effect of social or linguistic experience unless the child is ready to assimilate and integrate this experience into his own structures. (In Gallagher and Reid 1981,216)

Piaget again clarifies his view.

> Linguistic progress is not responsible for logical or operational progress. It is rather the other way around. The logical or operational level is likely to be responsible for a more sophisticated language level (In Gallagher and Reid 1981, 217).

While Chomsky differs from Piaget in his conception of the source of language, that is, innateness as opposed to constructivism, Chomsky agrees concerning acceptance of the inter-connection of thought and language.

> One reason for studying language - and for me personally the most compelling reason - is that it is tempting to regard language, in the traditional phrase, as "a mirror of mind." I do not mean by this simply, that the concepts expressed and distinctions developed in normal language use give us insight into the patterns of thought and the world of "common sense" constructed by the human mind. More intriguing, to me at least, is the possibility that by studying language we may discover abstract principles that govern its structure and use, principles that are universal by biological necessity and not mere historical accident, that derive from mental characteristics of the species." (1975,4)

The views of the great pioneers in psychology and linguistics have become well-known among reading theorists and researchers. These pioneering thinkers' works have influenced the direction of reading teaching methodology and research in recent decades.

B. Theories of Reading in Psychology and Linguistics

However, the pioneers' influence was not felt for some time, largely because of the strength of the behaviourist theories and emphasis on speaking by the audio-lingual method (Smith 1978b). Experimental psychologists concentrated on such matters as eye movements (Tinker 1958) and translation from spelling-to-sound (Venezky 1970). With the neglect of reading at this time, reading textbooks for native speakers contained recall and drill exercises with some exercises on the organization of text (Ridout 1948). Textbooks for students of English as a second language at intermediate to advanced level used recall of exact words, memorization, pattern practice and translation of vocabulary (Educational Services 1953, Croft 1960, Bowen 1963).

As a reaction to behaviourist psychology, the new field of cognitive psychology began in the 1960's (Moates 1980). Far ahead of this new group was Huey who stated

> Certain it is that reading, when carried on as the manipulation of abstract meanings for the attainment of the reader's purposes, becomes excellent practice in the higher processes of thought. (1908, 363).

Huey strongly supported the view of meaning as the aim of reading long before other psychologists did. An important educator, Gray, who worked on language learning throughout the world with UNESCO, focused on meaning as the function of reading (Gray 1969).

Opinion among educators became divided between those who saw reading as the obtaining of meaning and those who saw reading as decoding. Concentration on the teaching of phonics led to a belief by language teachers about how children read. The supporters of phonics believed that every sound should be noticed before word recognition took place (Smith 1978b). Kenneth Goodman proposed a unique model with his well-known "psycholinguistic guessing game".

> Reading is a selective process. It involves partial use of available minimal language cues selected from perceptual input on the basis of the reader's expectation. As this partial information is processed, tentative decisions are made to be confirmed, rejected, or refined as reading progresses. More simply stated, reading is a psycholinguistic guessing game. It involves an interaction between thought and language. (1967,259).

Goodman's ideas were supported by psychologists (Smith 1978a, 1978b; Macrae 1978) who were considering native speakers of English. The application to English as a second language was made (Coady 1979), and practical application was suggested (Nuttall 1982).

Goodman was discussing cognitive processes which need definition in terms of this study. There are many definitions of cognitive skills. It is possible to consider reading itself as a cognitive process and to accept sensation, perception, memory and thought as on a continuum of cognition (Athey 1976). Experimental psychologists believe that one aspect of eye-movement can be cognitive, that is, the mental process of locating a particular word when only its meaning is given in advance (Hochberg 1976). It is evident that eye movements in themselves are not considered as cognitive. They are considered as part of perceptual skills, such as matching of letters to sounds. However, a cognitive function can be the use of the context for developing word recognition hypotheses (Venezky 1976).

Another group of psychologists, following the viewpoint of Piaget, accept that cognitive skills are conceptual abilities. Following this approach, the definition arrived at for use in this study is that cognitive skills in reading are those skills which allow the reader to conceptualize about and analyze the content in reading texts. The cognitive skills are distinct from what is read. Additions to and modifications of this approach which were also incorporated into this study include those by Gibson, Ruddell and Carroll. In discussing cognitive strategies, Gibson (1975) includes the development of concepts and meaning. Conceptual development is aided by cognitive strategies to move from concrete to abstract levels (Ruddell 1976). A further division has been made which reflects the divisions in this study. Carroll (1977) divided reading into reading skills, such as recognition of vocabulary and other decoding skills, language competence, and cognitive ability.

C. Literacy and English for Specific Purposes

The interest in the theoretical aspects of reading was matched by an interest in world-wide problems of literacy (UNESCO 1953). The problem of literacy was considered in the United States where the number of illiterates, those who never attended school, was 3 million (2.4% of the population) in 1960. Functional illiterates, those who had less than five years of schooling and were above age 25, numbered 8.3 million (8.3% of the population) (Harman 1970, 230). The definitions of literacy from a historical perspective were examined (Resnick 1977) as a result of concern over the high population of functional illiterates. In the United Kingdom, the Bullock Report (1975) stated that many school leavers who were poor readers came from families of immigrant workers (p.25, p.284).

The immigrant worker's language needs were viewed as an increasing problem. In order to aid European integration and to cope with immigrants, the Council of Europe began in 1971 to develop a unit/credit system for teaching foreign languages to adults which could be standardized throughout Europe. Because of Chomsky's influence, mere repetition of patterns of grammar was avoided and creative control of language became the aim of language teaching. (Trim 1980,19). A threshold level was devised for all European languages which was not specific to any one language. The requirements included word lists which were selected on the basis of the concepts involved, grammatical lists, receptive and productive skills. Reading, for example, would be limited to reading of street signs and very short passages. Within the threshold level and projected higher levels, a functional-notional approach was taken with the aim of communication. Specific needs analyses were done to decide the professional or vocational language requirements for higher levels of the unit/credit system. (Richterich 1983).

The spread of literacy is of special concern to this study. Hong Kong has followed the western policy of changing from language for the elite to language for the masses. The Hong Kong students who were evaluated by their lecturers in this study, are members of a society which has given priority to the increase of educational opportunities. The inevitable result is that not all students are able to meet the required educational standards successfully.

Another specialized teaching approach was developed at several levels, including tertiary level, to meet second language needs. English for Specific Purposes (ESP) began as courses to supply occupational requirements, including both vocational needs of adults, and academic and professional needs of science and technology students at post-secondary level or above. The increasing need from the 1970's for the spread of scientific and technological knowledge around the world resulted in a division of English for Specific Purposes into English for Science and Technology (EST) and other specialized courses (Mackay and Mountford 1978). The concurrent work of philosophers and sociolinguists developed an interest in the structure of discourse and the act of communication which influenced language teaching methodology (Widdowson 1979). The application of discourse and communication theories to EST courses led to analysis of scientific and technological discourse and communication needs, followed by appropriate course design.

Widdowson (1979) centred his thinking on the communicative functioning of EST discourse.

> Whether one is using English or French, Indonesian or Chinese, one is obliged, as a scientist, to perform acts, like descriptions, reports, instructions, accounts, deductions, the making of hypotheses, and the calculating of results. These are some of the basic cognitive and methodological processes of scientific discourse. (p.24)

His emphasis on the communicative functions, which included cognitive processes, led to a new viewpoint in constructing textbook material which would "develop in the student an awareness of how English is used to communicative effect in scientific discourse." (1979,35)

The problem of analyzing scientific discourse is brought up by Widdowson himself (1979) and by Strevens (1977) who pointed out the difficulties of English language teachers when faced with teaching scientific texts which they did not understand. Moreover, Strevens also cited the "bandwagon effect" (1977,189) of ESP courses which do not do much more than substitute lexical items in general language courses.

As a result, the actual application of cognitive skills to ESP/EST teaching materials has been limited. Even ESP textbooks which have been carefully constructed in consideration of communicative functions (Allen and Widdowson 1978) are only able to cover a selection of functions and rhetorical skills, such as result and definition. Further work has been done on ESP by Munby (1978) who followed the communicative approach and developed a detailed model for ESP syllabus design. Based partly on Munby's work, Grellet (1981) produced detailed sample exercises for reading to help ESL teachers. ESP is also of special concern to the population of this study since English language programmes are frequently expected to help students with their major discipline studies, such as in EAP (English for Academic Purposes) programmes, a sub-group of ESP.

II. Special Areas Directly Related to This Study

A. Cognitive Processes in Reading

The areas of most importance to this study emphasize cognitive processes in reading. Two current areas of theoretical study of reading processes are discourse comprehension and text linguistics. The work on strategies in discourse comprehension (van Dijk and Kintsch 1983) studies how cognition is used in analyzing language at several levels: propositional, coherence, macro-structure and schema levels. Other matters included are short-term and long-term memory, cultural background and utilization of the reader's world knowledge. A processing model is proposed with many sample notations shown of propositional (semantic unit) analysis, macro-structure analysis and schema analysis. Coherence is considered a control strategy to evaluate the relationship of parts at all levels (from correct reference to connection of macro-structures to schema). While the study is theoretical and needs further development, it attempts to segment the complex processes which are believed go on simultaneously in reading. This approach also proposes several levels of analysis of reading materials.

The second area, text linguistics (Beaugrande and Dressler 1981) is derived from discourse analysis and computer analysis. A processing model is postulated with interaction of four phases: parsing (grammatical relationships in the surface text), concept recovery (connecting language with cognitive content), idea recovery (constructing the main organizing concept), and plan recovery (finding the goals and intentions of the text). Any of the phases may become dominant in the process of reading and interact with the other phases. Network diagrams are created for each phase, including a grammatical dependency system, conceptual relationship patterns, schema, and inference patterns and world knowledge relations. These are all designed to be programmable for computer processing. The view of text linguistics is that a text is a system which operates partly internally and partly externally. That is, the reader must process the text which has already been intended by the writer to elicit certain processing actions from the reader. Although text linguistics is a relatively new and developing approach, it points the way to further understanding of the reading process. The strongly interactive model which is proposed shows the current view that reading must be approached from several levels at one time, many of which have a cognitive focus.

B. Schema Theory and Reading

These two theoretical studies on discourse comprehension and text linguistics build upon the research of schema theorists of the 1970's.[1] The idea of schema is one which can easily be comprehended by language teachers and readily translated into classroom materials for application. A definition of schema is:

> A schema can be thought of as a knowledge structure, or framework, which interrelates all of one's knowledge about a given topic. Prior knowledge, organized in schemata, in turn influences the form and content of new knowledge. (Richgels 1982, 54)

Perhaps the first of the schema theorists was Schank (1972) who did research on artificial intelligence. His theory of natural language understanding assumed that the basis of language is conceptual, and that the conceptual base consists of a formal structure. (The term which he gave it was not 'schema' but 'scripts'. In Richgels 1982) Conceptualizations could relate to each other by nesting or other relationships, allowing for many conceptualizations in a given text. Schank's actual analysis of natural language is extremely complex. He applies his ideas at the word level and uses Fillmore's case grammar for many formulas and diagrams which could be used for computer programs.

Another schema theorist was Frederiksen (1975) who defined understanding as a process in which the reader infers the knowledge structure of the writer by using the linguistic message, contextual information and his own knowledge from which the inference is made. The model he developed consisted of a network of two parts, the semantic network and the logical network. The semantic network includes objects, actions, case and non-case relations. The logical networks consist of logical systems, causal systems and relative systems. The two networks account for the information content of the text. High level units are identified as linking passages between logical structures and are his schema-like structures. Again, the analysis was designed for computer use and is complex.

Kintsch and van Dijk (1978) proposed an earlier and more limited version of their later model. The levels were the same in both of Kintsch and van Dijk's models: a micro-level, macro-level and schema structure. The model proposed that a coherent text base is formed at the micro-level, that the data is reduced to the gist at macro-level, and that control of the processes is done by the schema which is the reader's goal in reading. They used some of the terms common in discussion of schema theory. An element of a schema at any level is called a slot. When a slot is filled with a value, the process is called instantiation. In experimental work on psychology students, they found that the schema of psychological written reports was instantiated, and if slots were not readily filled, inferences were used. In the experiment, Kintsch and van Dijk were able to show that the several levels of their model do exist.

C. Applications of Schema Theory to Reading

Psychologists and educational psychologists continued to study schema as it applies to thought and as it relates to reading. Anderson (1977) related schema to Piaget's assimilation and accommodation for the acceptance (instantiation) of a schema and the change in a schema. Spiro (1980) discussed individual differences in activating schema. Poor readers may not have their knowledge arranged in schema and are not as efficient in reading as those who have schema.

Rumelhart and Ortony (1977) postulated many levels of schemata which allowed top-down and bottom-up processing. Top-down processing starts from the conceptual expectations and seeks the data input which will satisfy the expectations. Bottom-up processing starts from the data input and suggests a schema which suggests a higher level schema. As top-down and bottom-up processing occur simultaneously, they indicate an interactive model. Adams and Collins (1977) gave an example of top-down and bottom-up processing with Aesop's fable of "Stone Soup." They suggested four levels of processing: word, sentence, semantic and interpretive. As an example, the interpretive level has as top-down processing: the fable schema looks for a moral to the story. For bottom-up processing: the man's persistent clever, devious behavior suggests a moral.

D. Experiments in Schema Theory

1. Experiments with Native Speakers of English

Experiments with schema theory have followed the work of psychologists. One researcher of note is Meyer who has done many studies on the levels of structures in prose. Meyer (1977) reported a series of experiments done on university students which analyzed recall of ideas in passages at different levels. When students listened to passages and wrote what they recalled, the higher level idea units were remembered best. In another test, the students read passages which were controlled for the level of the idea units. One passage had idea units at the top of the content structure (the high passage), and the other passage had the same idea units at the bottom of the content structure (the low passage). Different groups of students read the high passage or the low passage of three different articles. The results showed that the high passage readers recalled the important idea units more often than did the readers of the low passage. One week later, the same students were given a delayed recall task with the same results. Other experiments on passages with the same organizational pattern but different content showed that both similarity of pattern and height of idea unit had a positive effect on recall.

In another group of experiments (1980), Meyer used a text on supertankers to measure ninth-grade (Form 3) students' recall of top-level structures. As expected, good readers (measured by previous tests) recalled the top-level structure more often than did average or poor readers, and also recalled more other units at lower levels than average or poor readers. In a delayed recall task, some of those who had used the top-level structure in the immediate recall task, did not use it the second time and also recalled fewer lower level units. In the recall task, these students equalled the scores of those who had not used the top-level structure in either task. Another group who had good vocabulary but poor comprehension according to tests, benefited from signaling devices (such as: 'example', 'first'). The results show a strong relationship between comprehension skills and use of the top-level structure in the text, which also influences the amount of information recalled.

The method of division of the information in the supertanker passage was elaborated by Meyer (1984). The division of the passage into subtopics is based on rhetorical relationships which form five basic groups: causation (antecedent/consequent), comparison, collection, description, and response (problem/solution). The ideas (or propositions) are related to each other rhetorically, and some ideas are subordinated to others to form a tree pattern. In experiments with ninth grade students who were taught these rhetorical relationships, both identification of the top-level structure and recall of information increased markedly. Meyer suggested that textbooks be selected which help the reader by indicating the top-level structures and macro-propositions (main ideas) by giving abstracts, pre-view sections, and summaries. Teachers should teach text organization using the rhetorical relationships mentioned, how to locate top-level and macro-propositions, and how to use text structure to find main ideas.

Work based on Meyer's research was done by Langer (1984). Native speakers at sixth grade level were given group pre-reading activities in which key concepts of the passages to be read were discussed. From the discussion, the students' background knowledge could be assessed as well as improved. Several long passages were read and twenty wh-questions were answered on each passage in multiple choice form. The questions were of four types, text explicit high level idea, text explicit low level idea, text implicit high level idea, and text implicit low level idea.

The results showed that the background knowledge which students had was a predictor of the answers to the questions. Students with low achievement on the questions probably need individual pre-reading assistance. It was found that the questions in descending order of difficulty were implicit high level, implicit low level, explicit high level, and explicit low level.

In order to study how high school students read, Langer (1986) asked students to read a passage and complete one of three written study tasks: answer questions, take notes, write an analytic essay related to the passage. While the students were reading and writing, they were asked to think out-loud and were tape-recorded.The comments of the students differed according to the task.In answering questions, the students focused on specific points; in taking notes, they followed the textbook organization of larger amounts of content; and in writing essays, they considered the whole passage and thought about it in a complex way. The use of lower level idea units occurred most during note-taking, and the greatest variety of mental process occurred during essay writing. Langer suggested that students be made aware of the apparent linkage between mental process and the type of study task, which would allow them to select the appropriate study task/mental process to use for various purposes.

2. Experiments with Non-native Speakers of English

An application of Meyer's rhetorical relationships was done (Carrell 1984a) with groups of university students having three native language backgrounds: Spanish, Arabic, and Oriental. The Oriental group was composed of Koreans and a few Chinese and was a small sample. A passage used by Meyer was adapted to use four of the rhetorical types for organizational patterns. One passage of each of the four types was selected at random to be read by each of the students. Immediate recall and delayed recall tasks were given. The results showed much lower recall of idea units than for native speaker university students and slightly lower scores than for ninth grade native speakers. Carrell felt this showed that the task was very hard for the second language students. The students showed lower scores on the delayed recall task than on the immediate recall task. Of the rhetorical types used, problem/solution and causation patterns showed less difference between immediate and delayed recall. The Orientals had highest scores in problem/solution and causation patterns. Moreover, they showed little loss in the delayed recall. Carrell suggested that native language rhetorical patterns might influence the patterns which seemed to emerge from the data (Kaplan 1966, Houghton and Hoey 1983). However, she cautioned against reaching conclusions because of the small amount of data and the conflicting information on contrastive rhetoric. Carrell concluded that since only one-fourth of the eighty students tested used the rhetorical structure in the text, students of English as a second language would benefit from being taught discourse structures.

Carrell (1984b) supported the application of schema theory to students of English as a second language and made a number of suggestions. Pre-reading activities to help with key concepts and vocabulary instruction are needed to increase background knowledge, sometimes creating necessary schema for comprehension. This is especially true if the text depends on cultural knowledge which students of English as a second language do not have. Another suggestion was that comprehension skills should be taught, particularly how to use schema which students already have and how to use both top-down and bottom-up processing interactively. In selecting materials, the teacher should be careful to choose longer, conceptually complete texts to help the student build schema.

E. Threshold Levels and Cognitive Skills

Two interesting theories have been put forward by Cummins in relation to bilingual students in Canada. He discussed a proposed threshold level(s) which a language learner must attain in his second language in order to maintain cognitive ability and allow cognitive growth which is potential in being bilingual (Cummins 1977, Swain 1985). Tests of intelligence and divergent thinking (fluency of thought, flexibility, originality) were given to three groups: native speakers of French, English, and both French and English (languages spoken in the home). All students were tested for the degree of balance as bilinguals. When the groups were analyzed, the French speakers, and French and English speakers who had become balanced bilinguals were found to have both high intelligence and high divergent thinking scores. However, the English speakers who were balanced bilinguals scored considerably higher on divergent thinking than the other groups. The English speakers' intelligence scores were comparable to those of the other groups. From this data and data from other studies, Cummins deduced that the results of bilingualism could be extremely positive. They could also be negative in the unbalanced bilingual if a threshold level of ability in the second language was not reached. Balanced bilingualism might not be necessary, but several threshold levels might exist, depending upon the language and thinking requirements of the tasks being attempted.

The second theory was that a part of cognitive/academic language proficiency (CALP) is separate from communication skills (Cummins 1980, Swain 1985). When English speakers in French programmes were tested on intelligence and French language, it was found that French oral production skills were unrelated to intelligence. Several other studies confirmed the results. Cummins asserted that CALP is important to academic success, CALP in first and second languages are interdependent, CALP development in the first language helps older learners to acquire the second language more quickly than younger learners do, and CALP development in one language will help with CALP development in the other language. Skinner (1985) also has referred to the CALP theory and combined it with the theories of Vygotsky and Piaget. Skinner demonstrated in his model that a student in each succeeding year of his education is expected to express increasingly difficult thought in language. The result is a large gap as both groups of skills do not increase quickly enough, indicating that both language skills and thinking skills need attention in teaching programmes. Skinner also related CALP to the four highest levels of Bloom's Taxonomy (1985, 104).

F. Language Across the Curriculum

Interest in language across the curriculum began with the Bullock Report (1975) and was used as the theme in Asia at the 1985 Regional Language Centre (RELC) Seminar in Singapore. Speakers from several countries supported the idea of language across the curriculum in which language teaching occurs in all content classes (Chellapan 1985, Tickoo 1985). One of the presenters was Mohan who has written about language across the curriculum for immigrants to Canada. In reading in the content areas, he emphasized the cognitive skills of classification, principles (including cause and effect, interpretation, generalizing), and evaluation (1979, 1985, 1986). He recommended cooperation between the content class teacher and the English language teacher so that content class teachers give some reading instruction where students find reading difficulties in texts. Mohan groups reading skills into: developmental reading skills (basic ability), functional reading skills (abilities needed in a given content area), and cross-content reading skills (cognitive processes needed by all content areas) (1986, 15). His processes, in part, coincide with the basis of this study, particularly his connection of content and language, as well as his own formulation of cognitive skills and cross-content reading skills.

G. Application of Bloom's Taxonomy of Educational Objectives

Bloom's Taxonomy of Educational Objectives - Cognitive Domain has been used by a number of educators in various fields. Mohan suggested using Bloom's Taxonomy as one of the sets of organization methods for study tasks (1979, 180) in teaching English language. Lindquist (1982) used Bloom's Taxonomy in writing reading guides for literature at secondary school level. Covington and Tiballi (1982) proposed using Bloom' Taxonomy in teaching developmental mathematics at tertiary level. They discussed group work as a means of making the analysis, synthesis, and evaluation processes clear. Blair-Broeker (1980) created a reading comprehension unit for grades 7 - 9 with Bloom's Taxonomy as the basis. Study questions using the lower three levels and activities using the higher three levels were developed for five novels. In all of these cases, Bloom's Taxonomy was successfully interpreted and modified to fit the requirements of the subject involved, supporting the use of the taxonomy in this study.

H. Needs Assessments

Of particular relevance to this study are the kinds and quality of information which can be obtained through needs assessments, particularly using the survey method. Needs assessments through surveys have been conducted by several researchers on English language skills at tertiary level. Horodezky (1983) asked 62 faculty in a western Canadian university what were the reading and listening comprehension difficulties which students had in introductory courses. Vocabulary was found to be the most difficult item in the natural sciences. Key principles of the disciplines were considered quite difficult in the social sciences and natural sciences. Johns (1981) conducted a survey in a western United States university of 140 faculty members to assess English skill requirements in lower division, and upper division and graduate classes. Reading was considered the most essential of the four skills with listening considered second, writing third and speaking last. The results of lower division, and upper division and graduate courses were similar. The results were related to the English as a second language students at the university, who were all required to pass writing entrance and exit tests. Since writing was a very low third compared to reading, it was recommended that a change in skill teaching should be considered for English as a second language classes.

Shoemaker (1983) surveyed 49 teachers and 46 students of English as a second language at a mid-western two year college in the United States. The questionnaire asked which skills were important to success in teachers' classes. The needs were for vocabulary, reading, brief writing tasks, and notetaking of lectures. Shoemaker concluded that the English as a second language programme was including too many skills and should reconsider the course content.

Ostler (1980) assessed the needs of advanced level English as a second language students in a western university in the United States. There were 96 undergraduates and 35 graduate students in the sample. The majority of the students came from departments in the soft sciences, hard sciences, business, and engineering. The needs of undergraduates and graduate students differed considerably. Undergraduates in the first two years needed to read texts and take notes most. In the last two years, undergraduates had additional needs of reading journals and writing research papers. The graduate students needed all these skills and also needed to ask questions in class and give talks.

Overall, the greatest needs were the abilities to read texts, take notes in class, and ask questions in class. Considerable need was also expressed for skills in writing research papers and reading journals. There were some specific needs for departments, such as needing to give talks in Public Affairs classes. Suggestions were made to modify the existing syllabus to be more specific in skills teaching, such as focusing on reading journal articles. The different needs of undergraduate and graduate students should also be accommodated.

Research in Hong Kong about the local English language situation has been limited at the tertiary level. A study was done on English language requirements of lecturers at one of the Hong Kong universities (Pierson 1980). Thirty lecturers who were interviewed were not satisfied with their students' ability in English and welcomed assistance from English language teachers. The need for reading skills was selected above writing skills and stressed by business, social science and life science lecturers. Opinion has been given that the English language skills of tertiary level students at another Hong Kong university are unsatisfactory. Writing skills are poor, and plagiarism of texts is frequent (Lord 1974). While part of the reason for plagiarism is inability to express the idea in good English, another part is lack of comprehension of the text,resulting in memorization or copying. Research was done at the same university on the reading speed of the students, which was found to be very low (Kvan 1969). In summary, it was thought that language proficiency at the tertiary level is not adequate and should be improved (Cheng 1981). In addition, a detailed study of the readability of Form 1 textbooks in English investigated lexis and syntax and made recommendations for simplification of texts (Cheung 1984). While this project was conducted below tertiary level, it indicates local concern about the reading problem in English for all students.

Studies of intellectual ability have been done in Hong Kong but below tertiary level. Siu (1979) in a large-scale study at the secondary school level found that students who were taught in English medium had lower intellectual development than normal with special problems for students with low academic achievement.[2] Heyworth (1983) conducted testing of lower secondary school science students on skills of Piaget's concrete thinking stage. The test showed low results for both Form 1 and Form 3 students with less than one-third achieving the concrete thinking skills proposed by Piaget for that age group. While these studies do not refer to tertiary level students, they reflect the educational background of the students at tertiary level.

Relationship of the Literature Review to This Study

There is no one piece of research which has served as the model for this study. As a result, it was necessary to review the literature in order to find support for the study from various sources. At the formulation stage of this study in order to establish a theoretical base, it was necessary to confirm the connection between reading and cognitive processes. First, it was found that the connection between language and thought was agreed by two important schools of thought (that of Piaget with the agreement of Vygotsky and that of Chomsky). Then it was possible to pursue the specifying of this connection to the developmental stage of young adult readers at the tertiary level in English as a second language (ESL). A basic view of the process of reading was proposed by Goodman, who expressed in a novel way the viewpoint of the supporters of reading as a search for meaning. His blending of psychology and linguistics was important as an indication of the two aspects, cognitive processes and language skills. Further indications came from Gibson, Ruddell, and Carroll, who considered cognitive ability as development of conceptual meaning, and reading skills as decoding abilities. The influence of this viewpoint was felt in teaching second languages in Europe (Council of Europe) and in other countries where the English language, and the cognitive processes and methods of science and technology were taught, often at tertiary level (ESP/EST). Part of the theoretical base was established once it was possible to see that reading skills and cognitive processes were connected and that this principle was applicable to tertiary level ESL.

Another point which needed review in the literature was the whole text approach to reading. It was thought that a reading theory should be found which would complement the model to be used in the study. Bloom's Taxonomy of Educational Objectives had already been explored as the possible model for the study and had been found to be widely accepted as a classification of specific cognitive skills. However, the taxonomy was designed for all types of education, not reading in English in particular. If the work of language theorists and practitioners related to reading could be shown to be compatible with Bloom's Taxonomy, confidence could be felt that it could serve as the model of the study.

Since the whole text approach to reading in current theory is still in the process of development, it was seen that an earlier version,schema theory, was applicable to the teaching of reading. A number of cognitive psychologists have been working on schema theory for over a decade. It has been subjected to experimental verification by Meyer in particular and by Langer with native speakers of English. The application of schema theory to ESL students by Carrell demonstrated that it could be applied to the Hong Kong situation.

The relevance of Bloom's Taxonomy could be discovered by comparison of Bloom's categories with schema theory. In going through the six main categories of the taxonomy, it can be shown that schema theory is compatible. In order to have Knowledge of organization of facts or principles of a discipline, the main idea of the text and several sub-levels must be known. For Comprehension of symbols or diagrams to convert them to other forms, it still is necessary to know how they relate to top-level structure. A part of Comprehension, interpreting the overall meaning of a passage, equals locating and understanding the schema. The other skill of Comprehension is making inferences which definitely requires understanding of the schema and sub-schemata. When the other levels of Bloom's Taxonomy are considered, it can be seen that schema must be known in order to Apply the content to other situations, Analyze into parts and find their relationships, Synthesize some portions of the content in new ways, and Evaluate the content.

When it could be seen that Bloom's Taxonomy was compatible with schema theory, it remained to discover if the taxonomy could be applied to various disciplines. Several applications of the taxonomy to different disciplines at different levels were found which indicated that successful modification and use were possible.

The third area of importance was the use of surveys in needs assessments. In the studies which were found, the surveys of faculty members and students at tertiary level concentrated on the particular language skills and techniques needed in course work. While the surveys found important information on differences between disciplines, levels of study and language skills needed, they did not attempt to ask about cognitive skills. From this information, it was seen that translation of Bloom's terms into concrete skills was necessary in order to develop a suitable survey instrument. It was also learned from the discussion of one researcher, Zemelman (1978, cited in Johns 1981) that surveys may be influenced by the subjectivity of the respondents. Caution must be exercised in interpreting survey results.

The search for information on the Hong Kong situation yielded very few studies. Research of the kind being proposed had not been done, and little information could be found which would benefit it. The information obtained from this study could add to the knowledge already obtained concerning Hong Kong Kong teritary education.

Of peripheral interest were theories on threshold levels and cognitive skills put forward concerning bilingual students in Canada. These served to reinforce the connection of language and thought, and the need to investigate both aspects as related to second language learning. In addition, the view of language across the curriculum supported the idea in this study of investigating the skills needed in major disciplines.

After reviewing the literature, it was seen that a theoretical base could be found in two essential parts: the connection between reading and cognitive skills and its applicability to tertiary level ESL, and the compatibility of schema theory and Bloom's Taxonomy, which would serve as the basis for the study. Encouragement could be gained from the application of the taxonomy to several fields and the success of surveys in needs assessments.

Notes to Chapter 2

1 The term probably was initiated by Kant and borrowed by Piaget to mean both physical and mental behaviour. A British linguist, F.C. Bartlett in 1932, defined schema by stating that "the comprehender used prior knowledge of the world, organized into holistic cognitive structures called schemata to 'conventionalize' what was read in terms of one's pre-existing world views." (quoted in Spiro 1980).

2. Siu's study argues for mother-tongue teaching in secondary school subjects rather than use of English medium instruction even though much of the oral instruction is in Cantonese. The Cantonese instruction tends to be translation of the English textbooks. The medium of instruction issue is beyond the scope of this study which only attempts to deal with the situation as it was at the time of the research.

Chapter 3

Methodology

The institution in which this study was conducted was the Hong Kong Baptist College located in Kowloon, Hong Kong. The Baptist College was founded thirty years ago by the Baptist Convention of Hong Kong and remained a private institution until 1978 when it came under the supervision and partial funding of the Hong Kong Department of Education. In 1983, Baptist College became a fully government-funded, three-year, tertiary level institution and would begin its first two degree programmes in 1986.[1] The student population in the academic year 1985-86 was approximately 2,200 with full-time academic staff of 184.

Because of the considerable recent changes in the Baptist College, academic staff were highly conscious of standards of academic excellence and rigorous teaching. Since 1981 when all departments had been evaluated by the Council of National Academic Awards from the United Kingdom, many of the academic staff had been involved in efforts to upgrade existing courses and in planning new degree courses. In order to validate the two degree programmes in the Combined Sciences and in Social Work, the Council of National Academic Awards had conducted validation exercises close to the time of data gathering for this study. All departments were expected to offer degree courses by the year 1990. Thus, most of the respondents in this study were aware of the changes being proposed in their departments and of the problems in maintaining high academic standards.

Definition of Terms

A number of terms which are used in this study with a particular meaning are given.

1. course - a large oranized body of study, such as, a degree course
2. subject - a specific body of subject matter taught under a single title, such as, Principles of Sociology (also used briefly in this chapter to mean participants in the research project)
3. major discipline - an academic field, such as, sociology, economics, physics
4. lecturer - a member of the teaching staff who teaches subjects in a major discipline
5. respondent - a lecturer who answered the questionnaire for this study
6. interviewee - one of the five sociology lecturers interviewed in the case study
7. English language teacher - one who teaches English language subjects and who is not included in the category of lecturers in this discussion
8. faculty - a group of disciplines similar in nature; as used at Baptist College: arts, business, science, social science
9. academic staff - any person who does classroom teaching
10. Bloom's Taxonomy: Knowledge - specific items of factual information and how these are ordered

Subjects

The subjects of this study were academic staff who had taught first year classes in the previous academic year, 1984-85. Opinion on the entire previous academic year was solicited in order to gain typical information. First year class teachers were selected because English language classes are generally taught to all first year students; therefore information on first year classes would be most useful.

The respondents to the questionnaire were 54 members of the academic staff from the four faculties as follows: Science Faculty 17, Business Faculty 6, Arts Faculty 16, Social Sciences Faculty 15. A total of 84 questionnaires had been sent out, with a return rate of 64%.

By consulting the table on the respondents to the questionnaire (Table 1), the educational level and the rank of the respondents can be seen.

The total full time academic staff in the year 1985-86 was approximately 179[2]. The respondents were considered to cover a representative group of the academic staff. Although the percentage of assistant lecturers was somewhat higher in the group of respondents than in the total staff, the variables of educational level and rank were not considered in this study.

Table 1

Information on Respondents Compared to Total Staff

Education	Respondents	Total Staff
doctorate	17 (31.5%)	52 (29.1%)
master's degree	29 (53.7%)	96 (53.6%)
bachelor's degree	6 (11.1%)	17 (9.5%)
diploma	2 (3.7%)	14 (7.8%)
	54	179

Rank	Respondents	Total Staff
principal lecturer	0 (0.0%)	4 (2.2%)
senior lecturer	10 (18.5%)	31 (17.3%)
lecturer	23 (42.6%)	96 (53.6%)
assistant lecturer	20 (37.0%)	36 (20.1%)
tutor demonstrator	1 (1.9%)	7 (3.9%)
technician	0 (0.0%)	5 (2.8%)
	54	179

The respondents were also grouped by departments within each faculty (see Table 2). It was thought that the faculty groups might be studied for differences in their responses. With the exception of the Business Faculty, the faculties were fairly evenly represented. The Business Faculty at the end of the previous academic year had a higher than average turnover of junior staff who principally taught first year students. The lack of response from the Business Faculty is mainly attributed to this reason.

Procedures

The main method used was the distribution of a questionnaire to lecturers in the Baptist College. In order to obtain cross-sectional data, questionnaires were sent to all academic staff who, according to administrative records, had taught first year subjects in the previous academic year. In order to obtain information in greater detail and depth, a case study was conducted by interviewing the lecturers of one department, the Sociology Department. Another source of data was the comparison of results of the questionnaire data analysis and the syllabus of a remedial reading class which had been taught in the previous academic year.

Preparation of the Questionnaire

The questionnaire (see Appendix A) was constructed using Bloom's Taxonomy of Educational Objectives-Cognitive Domain as the basis for questions on the cognitive skills required by lecturers. Bloom's Taxonomy was chosen because it has had considerable influence on language educators (Stern, 1983). Moreover, a seminar had been held at Baptist College in 1984 by Professor Lewis Elton, Director of the

Table 2

Respondents' Departmental Distribution[1]

Science Faculty		
	Biology Department	1
	Chemistry Department	5
	Mathematics Department	4
	Physics Department	3
	Computing Studies Unit	4
		17
Business Faculty		
	Accounting Department	0
	Business Management Department	4
	Economics Department	1
	Secretarial Management Department	1
		6
Arts Faculty		
	English Department (and Language Centre)	12
	Music Department	1
	Religion & Philosophy Department	3
		16
Social Science Faculty		
	Communication Department	1
	Geography Department	4
	History Department	2
	Social Work Department	1
	Sociology Department (including Psychology)	7
		15
	Total	54

[1] All departments were included in the distribution of questionnaires except the Chinese Department (from the Arts Faculty) which is not listed.

Institute of Educational Development of the University of Surrey in the United Kingdom. Bloom's Taxonomy of Educational Objectives - Cognitive Domain was introduced and discussed in the seminar and was understood and found interesting by the participants. Although few of the fifty participants, if any, were respondents to the questionnaire, it was assumed that the staff overall would be able to accept Bloom's Taxonomy and comprehend it. As Bloom's Taxonomy was written for all disciplines, some modification was necessary to adapt it to reading materials used in an English as a second language situation. Modification of this nature has been done of Bloom's Taxonomy in other situations as well (cited in Stern 1983: Valette 1971, Stern 1980, Ullmann 1982).

In addition to questions using a modification of Bloom's Taxonomy, other questions were designed to obtain information on the type, quantity, and purposes of reading requirements. Much of the questionnaire was focused on the academically weak students and included questions on the kind of assistance which was given to the weak students. Although some questions were asked on the language in which assistance was given, the problem of language of instruction was not addressed. This problem was considered to be outside the scope of the study since the data collected referred to English language reading materials. However, questions were asked concerning use of additional materials in the Chinese language. It is well-known that in Hong Kong, tertiary level textbooks and reference books in Chinese translation are scarce and that English language texts must be used (Pierson 1980), especially to be current with publications and with research in all academic fields.

The construction of the questionnaire was done over several months with a number of revisions being made before it was pilot tested at the Chinese University of Hong Kong. Members of the following departments participated in the pilot testing: history, social work, English literature, physics, business management, geography, communication, mathematics, and accounting. Those who pilot tested the questionnaire represented departments which corresponded to departments in Baptist College. In addition, several English language researchers gave comments on the pilot version of the questionnaire. Many valuable suggestions were given and revisions were made as a result.[3]

In the design of the questionnaire, several groups of questions were written with four possible responses of which only the first and last were labelled. However, it was realized that the data is nominal data, not ordinal data. Moreover, the choice from four responses would prevent a respondent from selecting a middle or average choice. Approximately half of these questions were stated positively and the other half, negatively in random order in order to encourage careful selection of the response.

The length of the questionnaire was reduced and the contents were edited many times, and the final version was six pages.[4] Considerable difficulty occurred in obtaining responses. The initial number of returned questionnaires was 37. After personal requests and reminders with further copies of the questionnaire being supplied, an additional 17 questionnaires were returned. Holidays, the end of the semester, and examination grading made it impossible to obtain more responses.

Details of the Questionnaire

The questionnaire was organized into three parts which deal respectively with reading requirements, weak students' abilities as opposed to the abilities required for success, and the possible contribution of English language teachers, towards helping weak students.

Part 1 asks for:

Questions 1 - 6[5]: general information concerning the subject

Questions 7 - 13: the types of reading materials used

Questions 14-17: supplementary assistance (to comprehension) in a text

Question 18: approximate volume of assigned readings

These questions were expected to elicit information on whether or not a textbook was required and what types of reading materials were in the syllabus of the class. In addition, answers were to indicate how much help a text gave for comprehension by using non-verbal materials, such as charts and symbols. The approximate volume of reading materials assigned was also asked. A general description of reading requirements would be obtained from the data in this part.

Questions 19 - 23: the use of Chinese language materials

If Chinese language reading materials were used to a great extent, the need for high-level reading skills in English might be reduced.

Questions 24 - 31: the purpose of reading assignments

Questions 32 - 37: the use of the main source of readings

This information would add to the profile of reading requirements gathered in this part of the questionnaire.

Part 2 focused on the weak students in the classes being surveyed. Weak students were defined in the questionnaire as "those who did not easily meet or did not meet satisfactory achievement standards."

Question 38: the percentage of weak students in the class

Questions 39 - 50: weak students' abilities

Question 51 - 63: weak students' reading abilities

These questions contained skills in the modified Bloom's Taxonomy of Educational Objectives - Cognitive Domain.

Questions 87 - 101: the lecturers' requirements in the modified Bloom's Taxonomy

Comparison was to be made between these questions and those on weak students' abilities in order to identify the areas and amounts of difference between requirements and performance in the view of lecturers.

Questions 64 - 78: remedial assistance given to weak students

Questions 79 - 86: language or conceptual adaptations made to accommodate weak students

The lecturer's opinion of their own amount and type of help to students was solicited through these questions.

Part 3 requested lecturers to decide on the items which English language teachers should focus on in helping the respondent's students.

Questions 102 - 113: language specific skills and skills which generally required cognitive processes

Questions 114 - 116: free response questions

The comments would be of interest in gaining the personal opinions of respondents. The data from this part would serve to give the attitude of lecturers towards having English language teachers help to reinforce cognitive skills. For a list of the cognitive skills of Bloom's Taxonomy modified for this study, see Table 3. (See Appendix A for a copy of the questionnaire.)

Case Study

A case study was conducted as a means of inquiring into the detailed reasons for questionnaire answers, using one department as a sample of the other departments. Inquiry into the evaluation methods and requirements was an important part of the case study. The selection of the Sociology Department was based in part on the friendliness of the group, because of the physical proximity of the offices to those of the English department, and in part on the conceptual accessibility of the subject discipline to researchers from the arts.

The method used for the case study was distribution of the questionnaire with the request to the lecturer to fill it out. An interview of approximately one and a half hours followed. The interviews were not tape recorded in order to preserve the informality and friendliness of the session. An interview protocol was used (see Appendix A) to aid in consistency of the questions asked, and detailed notes were taken.

The lecturers who were interviewed had all taught first year subjects. The original group of four lecturers who were identified as interviewees had taught first year subjects in 1984-85. However, it was later found that one lecturer had answered the questionnaire but shortly thereafter had gone on extended sick leave for the entire year. Further, another lecturer had been wrongly identified through administrative information as having taught a first year subject in

Table 3

Cognitive Skills of Bloom's Taxonomy Modified to Fit Reading

Skill	question	Definition
Knowledge I	88	ability to perceive the organization of facts using the methodology of the discipline
Knowledge II	89	ability to recognize and understand principles specific to the discipline
Comprehension I	90	ability to convert diagrams or symbols into words or to interpret them in another form
Comprehension II	91	ability to interpret the overall meaning of a reading passage
Comprehension III	92	ability to make inferences from a reading passage
Application I	93	ability to apply generalizations to a new situation or problem
Analysis I	94	ability to analyze a reading passage into parts
Analysis II	95	ability to analyze the relationships of parts of a reading passage.
Analysis III	96	ability to analyze the organizational mehtod of a reading passage
Synthesis I	97	ability to use elements given in a reading passage to formulate an original communication
Synthesis II	98	ability to develop a new plan or proposal
Synthesis III	99	ability to formulate and modify a hypothesis
Evaluation I	100	ability to judge a reading passage for internal consistency and accuracy
Evaluation II	101	ability to judge a reading passage by other works in the discipline

Note: Roman numerals are used with the categories under each skill in order to clarify further discussion.

1984-85 although he had done so in 1983-84. Since it was late in the process, the same department was kept for the case study, and two other lecturers who had taught first year subjects in 1985-86 were substituted. A fifth lecturer who had gone abroad for doctoral studies had been interviewed several months previously. Although he answered an earlier version of the questionnaire which could not be included in the data analysis, his interview answers were relevant to the discussion of the case study.

Of the five lecturers interviewed, two were senior lecturers, two were lecturers, and one was assistant lecturer in rank. In educational level, one had a doctorate degree, four had master's degrees. Three were men and two were women. Three were in their middle years and two were in their early thirties. One was an expatriate and four were Hong Kong Chinese. In length of service at the Baptist College, two had served more than five years, one had served between two and five years, two had served less than two years. In general, the group of interviewees seemed to be a rather typical sample of the total group of respondents and of the Baptist College academic staff as a whole.

The interviews were conducted within a three week period with the exception of one which had been held five months previously. The place of each interview was the office of the interviewee with no other lecturers present.

Details of Interviews

Essentially, the interview examined the responses given by the interviewees in greater detail. Additional questions were asked from the interview protocol which could not easily be asked in the questionnaire concerning:

1) the reasons for using a textbook or not requiring one, or for the selection of the particular textbook used;

2) the proportion of various types of reading materials used and the reasons;

3) the use of Chinese language materials and its purpose;

4) a detailed definition of weak students and the causes of the weakness;

5) the kind of help given to weak students, their reactions to the help, and the adequacy of the help;

6)the evaluation system in detail as to the types of evaluation and the standards of judgment employed along with the kind of cognitive skills required;

7) what English teachers can do to help the teachers and the weak students.

The information obtained gave a profile of the practice of the department in some first year subjects.

Analysis of the Previous Syllabus of a Remedial Reading Class

In the first semester of 1984-85, a remedial reading class was held as part of an experimental English proficiency programme. Students volunteered to participate in the programme instead of taking the regular three-hour-a-weak English required subject. The students spent nine hours a week in the the programme, three hours each in reading, writing, and interactive skills (listening and speaking combined). All assignments were completed in the nine hours. The number of weeks of teaching was thirteen. The general pattern of the reading part of the programme was: the first class hour in the week was an instruction period, the second hour was a supervised practice period with instruction, and the third hour was a free laboratory period with help available if the student desired. The third period was used for a variety of purposes, including doing reading assignments, computer exercises, free reading. When the student had finished the reading assignment, he could choose to do computer exercises or free reading.

The syllabus which recorded the actual content of classes, especially the instruction period, was analyzed for the cognitive skills taught. The results of the data analysis were compared with the syllabus in the effort to estimate what needed areas could actually be included in the syllabus, considering the time allowed. The results of this comparison could suggest realistic possibilities of incorporating cognitive skills in a remedial reading syllabus.

Limitations of the Methodology

1. The questionnaire method of gathering data yields self-report information which may not be reliable because of a possible tendency of respondents to give answers which they think are expected or would put them in a favourable light (Johns 1981). While this may be true, there seemed to be no other direct way of discovering what lecturers required. Simple inspection of examination questions would be insufficient since grading standards would not be known, and lecturers used several other means of evaluation. It is felt that the replies of lecturers were thoughtful and considered as a result of the general concern at Baptist College about improving the quality of teaching in order to meet degree standards. As a result, the data obtained on the lecturers' perceptions of their requirements of students were able to serve as a base of information for this study. The lecturers' perceptions of the students' problems, lecturers' attitudes and student-lecturer relationships added to this information.

2. The process of interviewing lecturers had limitations in itself. While lecturers were friendly, it seemed clear though unstated that they did not wish to reveal their own inadequacies nor to feel threatened by being thought to be inadequate. By focusing the interviews on the students' weaknesses, the possible threat to lecturers was largely removed. Moreover, more truthful answers were probably obtained because limiting the survey to first year students allowed interviewees to feel that all levels of cognitive skills would not be expected in first year subjects. Interviewees stated that the limited cognitive skills required of first year students were

appropriate since higher level skills were expected of second and third year students. In this way, the threat of criticism was apparently removed from the interviewees from their viewpoint.

Since lecturers were not used to detailed interviews on their teaching requirements, there was a certain amount of nervousness. The interviewees who were best known to the researcher seemed to have confidence that the data gathered would only be used for this study. It is possible though unsubstantiated that other interviewees might not have been so sure of confidentiality.

These are some of the problems in interviewing one's colleagues. A certain amount of delicacy must be used and discretion exercised as to how much information can be sought.

3. After the data had been gathered, it was realized that a useful analysis could have been done with information on the length of teaching experience of the lecturers. A comparison of the data gathered from those who had long experience in teaching, particularly at the Baptist College, and those who had not, might have yielded some useful information.

4. Unfortunately, it was not possible to obtain students perceptions in this study. Although including students in the study was considered, time constraints prevented development of another research instrument and other necessary arrangements. Students' opinions would have been helpful in analyzing subject requirements and students' weaknesses. The data could have been used to confirm or disconfirm the lecturers' perceptions (Shoemaker 1983).

5. Due to the small number of responses from the Business Faculty, it was not possible to obtain meaningful information on whether or not requirements differed between faculty disciplines. The number of total respondents was not large but might have given valid information if the numbers of respondents had been balanced.

Notes for Chapter 3

1. All factual information on the Hong Kong Baptist College has been obtained from the annual catalogue, in-house papers and administrative staff of the Baptist College.
2. The actual staff numbers fluctuated due to varying times of staff beginning duties, illness, leave and resignations. The staff establishment was 184, but in November 1985 when staff numbers were counted for this study, the staff was not at full strength.
3. Some of the modifications and revisions were in the format of questions, rephrasing of questions, even a change in the title of the questionnaire.
4. In consideration of the length and density of the questionnaire, a small packet of chocolates was sent with each questionnaire. Some respondents stated that they responded to the questionnaire because of the chocolates.
5. The numbers used in the data analysis of the questions in the questionnaire are used throughout the paper. See Appendix A for questionnaire with numbers.

Chapter 4

Results

I. Questionnaire Results

The statistical results from the questionnaire will be reported under the headings of the purposes of the study which were listed in the introduction (p.6). Additional headings were added as required.

1. Kinds, Quantity and Purposes of Reading Assignments Required by Lecturers.

A number of questions in the first part of the questionnaire dealt with reading assignments. Almost three quarters (70.4%) of the respondents required a textbook to be purchased by the students (question 3).

When lecturers were asked about frequency of use of several types of materials, their responses showed relatively low use, with reference books being used more frequently than other types of materials (see Table 4). All types of materials have low frequencies of use.[1]

The number of pages per week[2] of required reading was 23.06 pages with a standard deviation of 16.452, showing considerable variation in requirements. Since Baptist College students each semester typically take three or four subjects which require reading, most of these being major discipline subjects, the reading requirement using the mean, could be between 69.18 and 92.24 pages per week.

Table 4

Use of Types of Materials

(question number of the questionnaire are given)	Total responses	no frequency 1	2	3	great frequency 4	$\bar{X}$	SD
7. reference books (excluding a required textbook)	(52)	13	16	13	10	2.385	1.069
8. journal articles	(53)	23	16	10	4	1.906	.966
9. newspaper articles	(53)	28	15	7	3	1.717	.907
10. laboratory manuals	(53)	36	5	2	10	1.736	1.195
11. audio/videotaped lectures/discussions	(53)	25	18	7	3	1.774	.891
12. videotaped experiments	(53)	46	4	3	0	1.189	.521

In order to determine the importance of reading English language materials, several questions were asked about the use of Chinese language materials. As can be seen in Table 5, the use of Chinese language materials is low. Slightly less than one quarter of the respondents used Chinese language materials, and, of these, the quantity of materials they used was approximately one-third of all reading materials. Since materials in Chinese have low use, the need for reading English language materials is seen by implication, to be very great.

Table 5

Use of Chinese Language Materials

19. Respondents who did ask students to read materials in Chinese	24.100%
21. Use of translation or summaries of already assigned English materials	20.909%*
22. Use of materials supplementary to assigned English language materials	40.714%*
22. Percent of all assigned readings which were in Chinese	33.571%*

* These are percentages of the 24.100% of total respondents who used Chinese language materials.

Another group of questions inquired about the purposes of assignments. In Table 6, it is shown that obtaining general information and preparing for class discussion are comparatively frequent purposes.

Table 6

The Purpose of the Reading Assignments

	Total responses	no frequency 1	2	3	great frequency 4	$\bar{X}$	SD
24. to obtain the basis for a written report, research paper or essay	(52)	23	12	11	6	2.00	1.066
25. to prepare for class discussion	(52)	6	16	14	16	2.769	1.022
26. to prepare to give oral answers to pre-assigned questions	(51)	24	11	11	5	1.941	1.047
27. to show completion of assignment by writing a summary	(51)	29	15	6	1	1.588	.779
28. to obtain general information	(52)	2	8	20	22	3.192	.841
29. to follow your emphasis of points by writing answers to questions	(51)	20	11	11	9	2.176	1.144
30. to prepare for laboratory work	(51)	31	6	6	8	1.824	1.161

In further attempting to gain information on reading assignments, questions were asked on the way the main text was used. The responses showed high frequency of use of the main text as the general basis of knowledge and as a supplement to lectures (see Table 7).

Table 7

Ways in Which the Main Text Was Used

How often was your main text or main source of information used	Total responses	no frequency 1	2	3	great frequency 4	$\bar{X}$	SD
32. as the general basis of knowledge	(52)	2	2	10	38	3.615	.745
33. as a supplement to lectures	(52)	4	4	25	19	3.135	.864
34. as a way of gaining access to supplementary materials	(52)	14	11	18	9	2.423	1.073
35. as an initiator for group discussion	(51)	11	15	10	15	2.569	1.136
36. as a reference for laboratory work	(51)	31	5	6	9	1.863	1.200

Of interest is the use of the text as a supplement to lectures. Although this study did not attempt to deal with the medium of oral instruction, it was seen from responses and comments written on questionnaires that many Chinese lecturers used Cantonese as the medium of lectures. Since lecturers discussed topics in the textbook (see questions 33 and 65), they often explained concepts to their students in their native language. Regardless of this help to students, some of them were still regarded as weak in reading-related cognitive skills.

1.1 Opinions on the Importance of Reading Comprehension and In-text Aids

A few questions were asked in order to survey the views of lecturers on the importance of reading comprehension of their discipline and on the importance of the ability to use aids in the text itself, such as diagrams, questions, and symbols. Reading comprehension was deemed very important by the respondents and ability to use aids in the text were fairly important in helping reading comprehension (see Table 8).

Table 8

Importance of Reading and In-text Aids

	Total responses	not at all important 1	2	3	extremely important 4	$\bar{X}$	SD
14. The importance of reading comprehension to lecturer's subject	(54)	0	9	15	30	3.389	.763
15. The importance of ability to interpret charts, maps, diagrams, etc, in reading materials in helping comprehension	(54)	2	18	18	16	2.889	.883
16. The importance of questions in reading materials, particularly at ends of chapters, in helping comprehension	(53)	4	12	23	14	2.887	.891
17. The importance of the ability to interpret the meaning of symbols and numbers in reading materials to the lecturer's subject	(54)	1	19	19	15	2.889	.839

2. The Levels of Cognitive Processes Related to Reading Assignments Required in First Year Subject Specialties for Satisfactory Achievement

A group of questions were included in the questionnaire which contained the modified Bloom's Taxonomy of Educational Objectives - Cognitive Domain, adapted to reading skills. The questions asked lecturers to decide whether or not their students needed the skills in order to be successful in the first year subject surveyed. The items were listed in Bloom's hierarchical order beginning with question 88 as one of the lowest of the hierarchy to question 101 as one of the highest. Bloom used six categories in which he grouped skills, but the skills within each category had no apparent hierarchical order themselves. It can be seen in Table 9 that the general trend is for the items to be in descending order of demand in going from the lower levels of the hierarchy to the higher levels. In other words, lower level skills are more required, and higher level skills are less required. An exception to the trend of means over 3.00 in lower level skills is Comprehension I, the ability to convert diagrams or symbols into words or another form (question 90) which has a mean of 2.731. The respondents were more divided on this question than on others about lower level skills. This may indicate a difference in requirement of this skill in different disciplines. The other exception is Analysis III, the ability to analyze the organizational pattern of a passage (question 96) which has a mean of 2.922. This mean is lower than those of the other analysis skills and may suggest that this skill is not so important once the other skills have been attained.

Table 9

Reading Related Cognitive Skills Required for Satisfactory Performance

Question (Knowledge)[1]	Total responses	Disagree 1	2	3	Agree 4	$\bar{X}$	SD
88. must be able to perceive the organization of facts using the methodology of the lecturer's discipline	(52)	2	7	16	27	3.308	.853
89. must be able to recognize and understand principles specific to the lecturer's discipline	(54)	0	7	15	32	3.463	.719
(Comprehension)							
90. must be able to convert diagrams or symbols into words or to interpret them in another form	(52)	8	14	14	16	2.731	1.069
91. must be able to interpret the overall meaning of reading passage	(53)	2	5	12	34	3.472	.823
92. must be able to make inferences from a reading passage	(53)	2	8	16	27	3.283	.863
(Application)							
93. must be able to apply generalizations to a new situation or problem	(52)	2	3	18	29	3.423	.776
(Analysis)							
94. must be able to analyze a reading passage into parts	(53)	2	10	22	19	3.094	.838

[1] Headings in parentheses were not included in the questionnaire.

Table 9 Continued

Question	Total responses	Disagree 1	2	3	Agree 4	$\bar{X}$	SD
95. must be able to analyze the relationships of parts of a reading passage	(53)	1	4	24	24	3.340	.706
96. must be able to analyze the organizational method of a reading passage	(51)	6	8	21	16	2.922	.977
(Synthesis)							
97. must be able to use elements in a reading passage to formulate an original communication	(52)	4	11	19	18	2.981	.939
98. must be able to develop a new plan or proposal	(50)	8	12	17	13	2.700	1.036
99. must be able to formulate and modify a hypothesis	(52)	8	13	21	10	2.635	.971
(Evaluation)							
100.must be able to judge a reading passage for internal consistency and accuracy	(52)	9	6	21	16	2.846	1.055
101.must be able to judge a reading passage by other works in the discipline	(52)	11	7	23	11	2.654	1.046

3. The Levels of Weak Students' Cognitive Abilities in the Opinion of the Lecturers

Two groups of questions asked the lecturers about their weak students' abilities. Included in these questions were items using Bloom's Taxonomy of Educational Objectives - Cognitive Domain. These items were mixed at random with other questions. The answers on weak students' abilities which related to Bloom's Taxonomy were to be compared with the stated requirements on Bloom's Taxonomy given in the previous section. (see section 4.1).

Further information was sought on the percentage of weak students with the mean result of 21.224%. The number of weak students, accordingly, at the time of the survey would have been 158 first year students. In considering the definition of weak students in the questionnaire (which was: "those who did not easily meet or did not meet satisfactory achievement standards") the percentage seems within the normal range. The percentage on the normal curve for poor and failing students added to the lower part of the middle range could amount to 21.224%. As Baptist College does not use pluses and minuses in its grading scale, a number of borderline students would be included in the lower range of the C grade.

In the first group of questions on weak students' abilities (see Table 10), only two questions were above the median in agreement with the given statement. These were that weak students understood high-level non-verbal forms (question 45) and that weak students had enough Chinese language reading ability for tertiary level materials (question 41). It should be noted that seventeen respondents did not answer the Chinese language reading ability question. Many marked the question "not applicable" or "I don't know." Both Chinese and expatriate lecturers made these remarks.

Question 40 asked for agreement that weak students had sufficient English language reading ability for tertiary level academic study. The mean was 2.396, which shows the lecturers' belief in the need for improvement. Students were rated poorly on ability to study independently of lecturers (question 39) and were felt to depend heavily on notes given in hand-outs and to expect "spoon-feeding" (question 46). (These are common remarks made locally in education, as secondary school education is believed to emphasize memorization of materials in preparation for the advanced level of examinations which lead to university entrance.) The responses indicate that weak students need to improve considerably in necessary skills.

The second group of questions queried the weak students' reading related abilities (see Table 11). The closest to the median was 2.462, the mean for question 59, the ability to understand the general meaning of a reading passage. The lowest mean was 1.962 for question 61, the ability to understand implied meaning in a reading passage. It is note worthy that none of the means are above the median. This indicates that the respondents considered low reading related abilities were some of the problems which weak students had.

Table 10

Weak Students' Performance

Question	Total	Disagree			Agree		
Weak Students	responses	1	2	3	4	$\bar{X}$	SD
39. could study independently of the lecturer	(51)	17	13	16	5	2.176	1.014
40. had sufficient English language reading ability for tertiary level academic study	(53)	10	20	15	8	2.396	.968
41. had sufficient Chinese language reading ability for tertiary level academic study.	(37)	3	10	13	11	2.865	.948
42. know the basic concepts of the lecturer's field	(51)	14	18	15	4	2.176	.932
43. could apply abstractions to concrete situations	(50)	12	22	11	5	2.180	.919
44. could produce a new plan of work by synthesizing elements of materials already studied	(46)	13	25	8	0	1.891	.674
45. did understand high-level non-verbal forms (e.g. mathematical formulas)	(43)	5	16	14	8	2.581	.932
46. did not depend heavily upon notes given in hand-outs nor expect "spoon-feeding"	(49)	22	19	5	3	1.776	.872
47. knew the basic principles of the discipline they were studying	(50)	15	17	15	3	2.120	.918
48. could develop and alter an abstract theory which explains data	(47)	14	27	6	0	1.830	.637
49. had adequate previous training in the discipline they were studying	(50)	25	16	7	2	1.720	.858
50. had the ability to translate one form of communication into another (e.g. give a written explanation of a table or chart)	(51)	8	23	17	3	2.294	.807

Table 11

Weak Students' Performance on Reading Related Skills

Question Weak Students	Total responses	Disagree 1	2	3	Agree 4	$\bar{X}$	SD
51. had enough vocabulary knowledge to read tertiary level materials in the lecturer's field	(52)	9	26	11	6	2.269	.885
52. understood meaning in reading passages when it was not directly stated	(52)	12	25	15	0	2.058	.725
53. could identify parts of a reading passage	(52)	11	27	12	2	2.096	.774
54. could evaluate the logical consistency of reading materials	(51)	8	27	15	1	2.176	.713
55. could remember specific content from a reading passage for an extended period of time	(49)	9	27	10	3	2.143	.791
56. comprehended the main topic and viewpoint in a reading passage	(53)	13	26	13	1	2.038	.759
57. could perceive the inter-connection between parts of a reading passage	(52)	16	22	12	2	2.000	.840
58. could evaluate reading materials according to major works in the field	(48)	13	18	15	2	2.125	.866
59. could understand the general meaning of a reading passage	(52)	6	21	20	5	2.462	.828
60. could recognize the systematic arrangement of parts of a reading passage	(51)	4	27	20	0	2.314	.616
61. could understand implied meanings in reading passage	(53)	14	29	8	2	1.962	.759
62. could analyze the elements of a reading passage	(51)	8	31	10	2	2.118	.711
63. could use parts of a reading passage to compose a new piece of writing	(49)	13	22	12	2	2.061	.827

3.1 The Assistance Given by Lecturers to Their Weak Students

Since this study focuses on the problem of weak students, the questionnaire asked the lecturers what kinds of assistance they gave to their weak students and how frequently the assistance was given. Two groups of questions were asked. The first group of questions included several possible types of assistance (see Table 12). Some questions dealt with assistance given in Cantonese and English. Several questions had means above the median. The respondents tutored weak students individually (question 74) at 2.925, explained ideas in Cantonese (question 65) at 2.750, directed students to reference books (question 73) at 2.692, and explained ideas in English (question 69) at 2.577.

The second group of questions divided the types of assistance into language adaptation and conceptual adaptation which were made in order to accommodate weak students (see Table 13). All six items have means over 3.00 with one over 3.50, which indicates high frequency of these adaptations as reported by the respondents. Conceptual adaptation is generally higher than language adaptation with more careful definition of terms (question 83) the highest at 3.519 and more careful explanation of concepts (question 85) the second highest at 3.491.

This data shows a variety of types of assistance was given to wask students. Some assistance was related to the clarification of concepts for which both Cantonese and English were used. However, many of the means are low, showing a limitation on the amount of help given.

Table 12

What Lecturers Did to Help Weak Students

Question	Total responses	no frequency 1	2	3	great frequency 4	$\bar{X}$	SD
64. asked them to revise A-level materials to improve basic knowledge	(51)	37	9	5	0	1.373	.662
65. explained the ideas in Cantonese	(52)	13	8	10	21	2.750	1.235
66. explained the sentence structure in Cantonese	(50)	28	8	6	8	1.880	1.154
67. explained the text organization in Cantonese	(50)	23	8	10	9	2.100	1.182
68. explained the vocabulary in Cantonese	(52)	21	10	10	11	2.212	1.194
69. explained the ideas in English	(52)	10	16	12	14	2.577	1.091
70. explained the sentence structure in English	(52)	22	12	10	8	2.077	1.118
71. explained the text organization in English	(52)	20	15	6	11	2.154	1.161
72. explained the vocabulary in English	(52)	16	11	10	15	2.462	1.212
73. directed them to reference books.	(52)	8	12	20	12	2.692	1.001
74. tutored them individually	(53)	3	8	32	10	2.925	.756
75. assigned them group work to clarify a topic	(51	16	15	12	8	2.235	1.069
76. had them do laboratory or practical work	(51)	25	3	11	12	2.195	1.281
77. gave them guided questions.	(53)	9	16	21	7	2.491	.933

Table 13

Adaptation of Teaching to Accommodate Weak Students

Question	Total responses	no frequency 1	2	3	great frequency 4	$\bar{X}$	SD
Language adaptation							
79. simplified language	(52)	3	7	15	27	3.269	.910
80. slowed down the speed of presentation	(52)	3	6	21	22	3.192	.864
81. used repetition often	(52)	1	6	26	19	3.212	.723
Conceptual adaptation							
83. defined terms more carefully	(52)	1	3	16	32	3.519	.700
84. gave additional background information	(53)	2	7	21	23	3.226	.824
85. explained concepts more carefully	(53)	1	3	18	31	3.491	.697

4.0 The Levels of Cognitive Processes Needed

4.1 The Differences Between the Stated Requirements and Performance of Weak Students on Bloom's Taxonomy of Educational Objectives - Cognitive Domain

The questionnaire had been constructed using questions on Bloom's Taxonomy of Educational Objectives - Cognitive Domain, modified to fit reading. The matching questions on performance were mixed in random order into the groups of questions on the lecturers' perceptions of the performances of their weak students. The matched questions were analyzed for the differences in the means of requirements and performance. A t-test was performed to determine the probability of chance differences in the means (see Table 14). The t-values are all significant at 0.12 degree of probability or less. The differences in means show a general tendency for lower level skills to have a higher difference than higher level skills. Higher level skills tend to have a lower difference. The gap between the requirement and performance of lower level skills is larger, while that of higher level skills is smaller.

In order to see if there were differences among the six general levels, another t-test was done on the same questions by grouping them under Bloom's six headings: Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. The requirements for each category were compared with the performance for each category. Means, differences in the means, t-values and probabilities were calculated (see Table 15). The differences in the means show the same pattern as was found in the first t-test, with the lower level skills (excepting comprehension) having a larger difference between requirements and performance. Again, the higher level skills tend to have a smaller difference. The t-values are all significant at the .002 level of probability or less.

Table 14

T-test on Differences Between Requirement and Performance on Bloom's Taxonomy of Educational Objectives - Cognitive Domain

Question		$\bar{X}$	$\bar{X}$ difference	T-value	2-tail prob.
88 53	need to perceive the organization of facts	3.3200 2.1000	1.2200	7.63	.000
89 42	need to recognize and understand principles of discipline	3.4902 2.1765	1.3137	7.66	.000
90 50	need to convert diagrams or symbols into words or other forms	2.7755 2.3061	.4694	2.72	.009
91 56	need to interpret overall meaning in a reading	3.4615 2.0385	1.4231	7.45	.000
92 52	need to make inferences from a reading passage	3.2745 2.0392	1.2353	7.01	.000
93 43	need to apply generalizations to a new situation	3.4375 2.1042	1.3333	7.53	.000
94 62	need to analyze a reading passage into parts	3.1569 2.1176	1.0392	6.46	.000
95 57	need to analyze the relationship of parts of a reading passage	3.3654 2.0000	1.3654	7.96	.000
96 60	need to analyze the organizational method of a reading	2.9388 2.3061	0.6327	3.63	.001
97 63	need to use elements of readings to formulate a new communication	2.9787 2.0851	0.8936	5.10	.000
98 44	need to develop a new plan or proposal	2.5682 1.9318	0.6364	3.46	.001
99 48	need to formulate and modify a hypothesis	2.5652 1.8043	0.7609	4.88	.000
100 54	need to judge a reading for internal consistency and accuracy	2.8367 2.1837	0.6531	3.36	.002
101 58	need to judge a reading by other works in the discipline	2.6739 2.1522	0.5217	2.63	0.12

Table 15

t-test of Grouped Requirements and Performance Differences

	$\overline{X}$	$\overline{X}$ difference	t value	2-tail prob.
Requirement Knowledge	3.4667	1.3407	11.02*	.000
Performance Knowledge	2.1259			
Requirement Comprehension	3.1515	0.9515	7.39*	.000
Performance Comprehension	2.2000			
Requirement Application	3.4375	1.3333	7.53*	.000
Performance Application	2.1042			
Requirement Analysis	3.1597	1.0139	7.88*	.000
Performance Analysis	2.1458			
Requirement Synthesis	2.7073	0.7561	5.75*	.000
Performance Synthesis	1.9512			
Requirement Evaluation	2.7500	0.5870	3.31*	.002
Performance Evaluation	2.1630			

* significant at .002

4.2 Analysis of Variance on Performance, Requirements Questions on Bloom's Taxonomy of Educational Objectives Both by Individual question and Questions Grouped by Skill

In order to discover whether or not there were significant differences among groups on the questions relating to performance and requirements using Bloom's Taxonomy of Educational Objectives - Cognitive Domain, an analysis of variance was conducted. The respondents were grouped four different ways based on the faculty in which the respondents were members.

In the first grouping, two groups were compared, the Arts Faculty which included English language teachers, and the Social Sciences Faculty which included the Sociology Department. The analysis was done since the Sociology Department whose members had been interviewed and the English language teachers were of particular interest in the study. English language teachers who service all disciplines might have a different view of reading related cognitive skills in comparison with the lecturers of one discipline. However, the numbers in these two groups were small and were combined with other members of their own faculties for more statistically accurate analysis. Of the items analyzed only one item showed a significant difference on the basis of the grouping (see Appendix C). Social Sciences (including the Sociology Department) stated that their weak students showed a significantly lower performance (at .05 level of significance) in Synthesis than Arts lecturers reported (including English teachers).

The second grouping was of three groups, using respondents of the Arts, Social Science and Science Faculties. These groups were analyzed because the numbers of respondents were similar and would probably yield a relatively accurate analysis. No significant differences were found in this analysis between any of the groups on any item (see Appendix C).

The third group for analysis was composed of the four faculties, Arts, Social Sciences, Science and Business Faculties. There were two items which showed a significant difference between groups (see Appendix C). The reported requirement was significantly different for judging reading materials for internal consistency (question 100). The other item was the reported requirement on Evaluation which included question 100.

The fourth group analyzed consisted of six groups formed by dividing respondents into the following groups: English language teachers, the remainder of the Arts Faculty, Sociology,the remainder of the Social Sciences Faculty, Science and Business Faculty. There were three items which showed significant difference between groups. One item was question 50 on the perceived performance of students on translating one form of communication into another (see Appendix C). The second item was the respondents' reported requirement of ability to develop a new plan or proposal (question 98). The third item was on the reported requirement that students should be able to judge a reading passage for internal consistency and accuracy (question 100).

The results seem potentially interesting, but from a statistical point of view they are probably not valid. Many of the groups have less than ten respondents in them which is unlikely to yield meaningful data. Moreover, there are contradictory results from the 3-group analysis in which no significant differences were found. The results are felt to be inconclusive.

4.3 Rank order Analysis of the Skills Bloom's Taxonomy of Educational Objectives - Grouped by Means

After the comparison of the lecturers' perceptions of their requirements and of the performance of their weak students on Bloom's Taxonomy was made, some interesting patterns emerged. The skills in the lower levels of the taxonomy seemed to be the ones with the largest differences, indicating the greatest need for attention. A further analysis of the data of Bloom's Taxonomy was done by rank ordering the means of the items of requirement and performance. These were divided into two groups which were labelled most and least. The result was four groups: Most required, Least Required, Best performed, Worst Performed. It is not suggested that these terms should be viewed as anything but arbitrary terms for the sake of giving labels. As it happened, the means could be grouped quite naturally (see Table 16).

By looking at Table 16, it can be seen that the skills which are "most required" fall into the first four levels of Bloom's Taxonomy. The skills which are "least required" are from all the last two levels with two exceptions, one in Comprehension and one in Analysis. When performance is viewed, it is seen that the "best performed" are mixed and include Evaluation. The "worst performed" are also mixed, but with all of the Synthesis skills included, two of them at the bottom of the list.

After putting the means in rank order in Table 15, it seemed necessary to have a clearer view of the requirements and their matching skills. Another analysis was done using the rank order of requirements and the matching skills of performance. The differences between the means were calculated as well (see Table 17). From this table which shows the details of the skill in shortened form, it is seen that the skill in Analysis (question 96) which is among the "least required" is Analysis III, analysis of organizational method. The skill, Comprehension I (question 90) among the "least required", is the ability to convert diagrams or symbols to other forms.

Since among performance means, the difference between the highest performance mean and the lowest performance mean was small (.5018), it seems more useful to look at the differences between the requirement and performance means on each skill. When the differences in means are considered, the differences for the "most required" skills are appreciably higher than those for the "least required" skills. The differences show a distinct pattern which clearly indicates a need for the most required skills to be improved . Weak students who are unable to perform these skills satisfactorily in relation to reading assignments in academic texts, may have difficulty in meeting academic standards. These results are the most important finding of this study.

Table 16

Rank Order of Means of Bloom's Taxonomy of Educational Objectives[I]

Requirements				Performance			
Question Most Required by Means				Question Best Performed by Means			
	$\bar{X}$	General Skill			$\bar{X}$	General Skill	
89	3.4902	Knowledge	II	60	2.3061	Analysis	III
91	3.4615	Comprehension	II	50	2.3061	Comprehension	I
93	3.4375	Application	I	54	2.1837	Evaluation	I
95	3.3654	Analysis	II	42	2.1765	Knowledge	II
88	3.3200	Knowledge	I	58	2.1522	Evaluation	II
92	3.2745	Comprehension	III	62	2.1176	Analysis	I
94	3.1569	Analysis	I	43	2.1042	Application	I
	Least Required by Means				Worst Performed by Means		
97	2.9787	Synthesis	I	53	2.1000	Knowledge	I
96	2.9388	Analysis	III	63	2.0851	Synthesis	I
100	2.8367	Evaluation	I	52	2.0392	Comprehension	III
90	2.7755	Comprehension	I	56	2.0385	Comprehension	II
101	2.6739	Evaluation	II	57	2.0000	Analysis	II
98	2.5682	Synthesis	II	44	1.9318	Synthesis	II
99	2.5652	Synthesis	III	48	1.8043	Synthesis	III
Difference between highest and lowest ranked skills	.9250				.5018		

[I] Roman numerals are supplied for easier matching of skills. For short descriptions of the skills, see Table 17. For descriptions in numerical order, see Table 3.

Table 17

Comparison of Rank Order of means of Requirements with Matching Skills on Bloom's Taxonomy of Educational Objectives

Most Required

Question		$\bar{X}$	$\bar{X}$ difference
89	Knowledge II - recognize and understand	3.4902	1.3137
42	principles of discipline	2.1765	
91	Comprehension II - interpret overall	3.4615	1.4231
56	meaning in a reading	2.0385	
93	Application I - apply generalizations	3.4375	1.3333
43	to a new situation	2.1042	
95	Analysis II - analyze the relationship	3.3654	1.3654
57	of parts of a reading passage	2.0000	
88	Knowledge I - perceive the organization	3.3200	1.2200
53	of facts	2.1000	
92	Comprehension III - make inferences from	3.2745	1.2353
52	from a reading passage	2.0392	
94	Analysis I - analyze a reading passage	3.1569	1.0392
62	into parts	2.1176	

Least Required

Question		$\bar{X}$	$\bar{X}$ difference
97	Synthesis I - use elements of reading	2.9787	0.8936
63	to formulate a new communication	2.0851	
96	Analysis III - analyze the	2.9388	0.6327
60	organizational method of reading	2.3061	
100	Evaluation I - judge a reading for	2.8367	0.6531
54	internal consistency and accuracy	2.1837	
90	Comprehension I - convert diagrams or	2.7755	0.4694
50	symbols into words or other forms	2.3061	
101	Evaluation II - judge a reading by other	2.6739	0.5217
58	works in the discipline	2.1522	
98	Synthesis II - develop a new plan or	2.5682	0.6364
44	proposal	1.9318	
99	Synthesis III - formulate and modify a	2.5652	0.7609
48	hypothesis	1.8043	

4.4 What English Teachers Can do to Help from the View Point of Lecturers

In order to obtain the lecturers' view on what , if anything, English language teachers could do to help in teaching the lecturers' students, a group of questions on various language and general cognitive skills was included (see Table 18). The questions asked the relative importance of each item for English teachers to focus on in order to help students. The means for all items were high with all being over 3.00 except for the question on spelling (question 103) at 2.926 and on complex sentence structure (question 106) at 2.759. Questions 102 to 108 are related to general language ability, while questions 109 to 112 are related to some of the cognitive skills in Bloom's Taxonomy. Generally, the means on the cognitive skills questions are somewhat higher than those of the language skills questions. The standard deviations of the cognitive skills questions are either similar to those of the language skills questions or lower, showing a marginal tendency for more agreement on the cognitive skills than on the language skills.

The information from these questions shows the lecturers' interest in having English language teachers assist in the traditional area of language forms and also in the reinforcement of cognitive skills related to reading. Open-ended questions were asked at the end of the questionnaire. A question asked for language skills which English language teachers could focus on to help students (question 114). There were 27 respondents, or 50% of the total respondents. Many gave multiple responses adding up to 50 different responses. There was considerable diversity in their responses which are divided by discipline groups (see Table 19). These results show combinations of language skills which are desired by the respondents: oral, reading, writing (2 responses from Science, English), oral and writing (4 responses from Social Sciences, Science), writing and reading (1 response from Social Science). There are also single skills desired: reading (3 responses from Social Sciences, Science), oral (5 responses from Science, Business, English), listening (2 responses from English) and writing (2 responses from Social Sciences, Arts). Mechanical skills are desired as well (8 responses from Social Sciences, Business, Arts, English. 4 responses were from English language teachers). Totally, the number of responses which stated the desire for different skills was: listening 2, reading 6, writing 9, oral 11, mechanics 8.

These responses showed interest in a combination of English language skills as well as single skills and mechanics. The productive skills were often listed, and reading was also desired.

Table 18

What English Language Teachers Should Teach

Question		Total responses	not at all important 1	2	3	extremely important 4	$\bar{X}$	SD
102	grammar rules	(54)	2	12	19	21	3.093	.875
103	spelling	(54)	4	14	18	18	2.926	.949
104	general vocabulary	(54)	3	7	22	22	3.167	.863
105	vocabulary specific to the lecturer's discipline	(52)	4	9	16	23	3.115	.963
106	complex sentence structure	(54)	6	14	21	13	2.759	.950
107	paragraph and essay organization	(54)	1	11	21	21	3.148	.810
108	sentence connections and transitions	(54)	2	7	23	22	3.204	.810
109	ways to find specific information in reading	(52)	0	2	19	31	3.558	.574
110	ways to interpret an author's statements	(54)	0	7	17	30	3.426	.716
111	ways to analyze readings	(54)	1	8	12	33	3.426	.815
112	ways to evaluate readings	(53)	3	7	21	22	3.170	.871

Table 19

Open-ended Question

Question 114 Are there any particular language skills which you would like English language teachers to focus on, in order to help your students?

Sociology
1. general vocabulary
   general approach

Social Sciences
2. help students to build reading habit
3. oral skills
   written skills
4. verb tenses
   number agreement
5. style of writing appropriate to the discipline
6. ways to write selectively & substantially
   ways to read faster
   ways to grasp the main points of the argument

Scinece
7. how to comprehend a passage
8. written communication
   oral communication as giver & receiver of information
9. comprehension
   writing
   oral English
10. oral ability
    writing ability to be clear and logical
11. oral communication
    written communication for clear and effective expression of an idea
12. speed reading
    ability to recognize key points of the author's work
13. oral communication with confidence in expressing ideas

Business
14. oral presentation of ideas
15. oral presentation, especially in defense of idea
16. grammar rules
    vocabulary
    sentence structure

Arts
17. correct sentence formation
    grammar
    essay writing
18. common difficulties of Chinese students
19. grammatical rules to help in understanding a third language
20. linguistic differences between English and Chinese

English
21. eliminating wordiness
    learning to subordinate
22. oral skills of pronunciation
    intonation
23. listening comprehension
    group discussion techniques
24. communicating orally
    vocabulary
25. skills in reading
    writing
26. sophisticated transitions
    sentence structures
    proofreading
27. listening comprehension
    notetaking

Question 115 sought responses on thinking skills which English language teachers could focus on to help students. There were 20 respondents, or 37.04% of total respondents, who often gave multiple responses which added up to 31 different responses. The responses had wide diversity. The results were grouped according to discipline (see Table 20). The results were analyzed according to Bloom's Taxonomy. Several items could not be classified because they covered several levels (logic and argument with 4 responses; mathematical thinking skills, personal opinion, independence with 1 response each). Evaluation was desired (3 responses from Science, Business). The remainder seemed to be classified under the four lower levels of Bloom's Taxonomy. They were Knowledge (2 responses from English), Comprehension (3 responses from Science, English), Analysis (16 responses from all groups.) In total 21 responses (67.74%) did fit the four lower levels of Bloom's Taxonomy and 10 did not.

The last question (question 116) asked for other comments. There were six responses, or 11.11% of total respondents, of which 3 commented on the unusual nature of their subjects which might make their responses uncharacteristic. One respondent hoped for future surveys related to his faculty. The complete list of responses is supplied (see Appendix B).

Lecturers gave favourable response to the assistance which English language teachers could offer to students. Half of the lecturers supplied language skills which English language teachers could focus on, and almost forty percent suggested thinking skills.

Table 20

Open-ended Question

Question 115 Are there any particular thinking skills which you would like English English language teachers to focus on, in ordr to help your students?

Sociology
1. analysis

Social Sciences
2. logical argument
3. transformation of research material into students' own language
4. ways to develop logical argument & present clearly & fluently

Sciences
5. evaluation of results
   criticism of methods used
6. analysis of the composition or structure of words
7. ability to understand new terms explained in the text
8. analysis & identification of main points in a reading passage
9. abstract the main point from a passage
10. mathematical thinking skills

Business
11. ability to analyse problems: to be able to think of other questions related to what is being used
12. ways to analyse a reading passage
    ways to evaluate a reading passage

Arts
13. how to avoid common mistakes arising from thinking in Chinese patterns and structures
14. cultural differences

English
15. independence
    analysis of communication
16. formulating a thesis to control a discussion
    supporting ideas with details from the works read
    being specific
17. elicitation of real personal opinion
    generation of ideas and methods to classify these
    development of logical basis for organization of ideas
    ability to draw inferences and make conclusions
18. organization of ideas
19. logical sequencing and relationships
20. logic
    ability to use own words
    ability to draw conclusions from reading
    ability to draw conclusions for an argument

II. Interview Results

The interviews with five Sociology Department lecturers followed an interview protocol (see Appendix A) with the aim of inquiring further into topics on the questionnaire. Of the five lecturers interviewed, four selected the same subject for discussion, Principles of Sociology, which was a basic subject for sociology major students and was also a service subject for social science students. The fifth lecturer discussed Social Institutions which was taught to both sociology major and social sciences students. The information which follows is organized according to the purposes of the study (see p. 6).

1. Kinds, Quantity, Purposes of Reading Assignments

Question 1.a. asked why a textbook was or was not selected.

Of the first four lecturers who taught the same subject (designated A,B,C,D in this explanation), most of them could not answer the question as only one had been on the selection committee for textbooks. The others had found that the decision to use a textbook was already made when they were assigned to teach the subject. Lecturer E used no textbook because the content of the subject dealt with both Asian and western institutions, and found no one textbook that was suitable.

Question 1.b. asked why the particular textbook was selected.

Although most of the lecturers did not choose the textbook, they were all satisfied with it. Their comments on the textbook ranged from favouring its organization and comprehensive coverage of topics to finding its writing style and language level to be suitable. (for a list of all the comments, see Appendix D).

Question 1.c. asked how much of the readings assigned were in the textbook.

Of the four lecturers who taught the same subject, two stated that most of the readings required were in the textbook, while two stated that somewhat over half of required readings were in the textbook.

Question 2. asked the percentage of other readings required in references and journals required and the purpose of the assignments.

Of the four lecturers who used a textbook, only one stated that students were required to read journal articles frequently. The other three lecturers required a small amount of reading of journal articles, newspaper articles and reference books. The lecturer who did not use a textbook required very frequent use of reference books, and frequent use of journal and newspaper articles. The purposes of using these sources included showing different viewpoints on a concept, giving guidelines for field projects, helping students to write a term paper and gaining information for class discussion. (For a complete list, see Appendix D). These answers agreed with the responses from the questionnaire.

Question 3. asked the importance of reading skills in English to the Subject

Of the five lecturers, two answered that reading skills in English were extremely important in their subjects and three answered that they were quite important.

Question 4. asked the volume of readings per week.

Of the five lecturers, three replied that they assigned approximately 30 pages per week, one assigned 40-60 pages per week depending upon the topic, and one assigned 10 pages per week. Some of the assignments were related to the length of chapters in the textbook, which was approximately 30 pages. These answers indicated slightly larger assignments than the mean of assignments stated in questionnaire responses.

Question 5. asked whether Chinese materials were used and why they were or were not used.

Generally the five lecturers required a small amount of Chinese language materials or none. Two lecturers required reading of supplementary materials in Chinese because the students would gain a more thorough comprehension of the topic. Three lecturers did not require Chinese language materials because the materials on the subject are in English. Of these, one encouraged reading of Chinese language newspapers and magazines for projects in addition to the required reading of English language newspapers and magazines. These answers agreed with the responses on the questionnaire.

2. The Levels of Cognitive Processes Related to Reading Assignments for Satisfactory Achievement

Question 8.a. asked the cognitive skills which were necessary in subjects.

The interviewees replies mainly fitted the four lower levels of Bloom's Taxonomy. There were two exceptions: logical thinking (which cannot be classified as it would use both lower and higher level skills), and synthesis of parts. In addition, three interviewees cited: supporting and defending a point of view or agreeing and disagreeing. In the interviews, two interviewees stated that they did not expect evaluation of the viewpoint, while the third interviewee did expect defense of the viewpoint as opposed to other viewpoints. In total, there were five exceptions (out of 21 items) to the requirement for the four lower levels of Bloom's Taxonomy. This agrees with the questionnaire data.The lecturers gave a variety of replies.

Lecturer A:
    Knowledge of concepts, application, analysis

Lecturer B:
    Knowledge , understanding of concepts.
    Logical thinking, defense and support of a view

Lecturer C:
    Comprehension of subject matter
    Understanding of definitions and examples
    Understanding of concepts and ability to explain them
    Ability to accept or reject a point of view
    Application

Lecturer D:
    Concepts, application

Lecturer E:
    Analysis of reading, synthesis of parts
    Ability to agree or disagree
    Comprehension of readings and ability to explain in own way

Question 8.b. asked what was the evaluation system in relation to readings, especially examinations, projects, papers

An important part of the interviews was the responses on the evaluation systems used by the interviewees, since this information could not readily be obtained through questionnaire responses. The results of this part of the interviews showed variation in the kind of evaluation methods used and in the cognitive skills required. However, the use of lower levels of Bloom's Taxonomy was largely substantiated. Interviewees were asked in detail the system they used for evaluating students, their expectations for satisfactory student performance, and the percentages given to each method of evaluation if there were fixed percentage.

All of the interviewees used a midterm test and a final examination. The variation on the type of questions asked was quite marked. One interviewee used all essay questions and expected students to defend a position, whereas another interviewee used all objective questions and expected students to show Comprehension of the information. The other three were closer to each other in the types of questions and expectations.

Four of the interviewees required a term paper. Again there was a wide range of requirements. One interviewee weighted the term paper heavily and expected considerable research to support the defense of a view, using Synthesis and Evaluation. The second interviewee required a short paper on a limited topic applied to Hong Kong, the third, Application of a theoretical model to Hong Kong, the fourth, Analysis of an author's viewpoint.

Two interviewees included group discussion as part of the evaluation. The expectations were for use of the cognitive skills, Comprehension and Analysis, in order to make comments. Two other interviewees required two small projects on preliminary field work. They expected cognitive skills, mainly of Application and Analysis.

The comments of two interviewees showed a desire for more similarity in the evaluation system than was in existence at the time of this study. Generally, the interviewees did expect the lower levels of Bloom's Taxonomy in the evaluation systems.

The lecturers gave detailed explanations of what percentage of the grade each counted, a. what types of evaluation were used, and b. what was expected for satisfactory performance.

Lecturer A:

1. 10% a. Group discussion based on interview assignments.
   b. Report interview data, discuss on the basis of theories taught; show organization and knowledge of theories.

2. 20% a. Midterm test written by individual lecturer. Short answer, short definition, essay.
   b. Knowledge of concepts, ability to give illustrations, analysis.

3. 40% a. Paper on a hot issue related to Hong Kong or another area.
   b. Choose a theoretical model and apply the model to the issue. Understand and explain the model. Obtain sufficient information.

4. 30% a. Final examination written by all lecturers; all students have the same examination. Same pattern as midterm test.
   b. Same expectations as for midterm test.

Lecturer B:

1. a. Midterm test - departmental - multiple choice questions in which a concept is given and four situations are given to which the concept may apply.
   b. Application of concepts to situations.

2. a. Final examination - departmental - all essays on issues.
   b. Comment on different views of one issue, defend and support one of three points of view. Judged by ability to qualify a position, use logic, explain away counter arguments.

3. Weighted heavily a. Term essay - on one of ten suggested controversial topics or student can propose own topic.
   b. 75% on content, 25% on presentation (format, bibliography form, spelling). Organization of data and ideas, presentation and defense of a view with adequate data.

Lecturer C:

1. 10% each
    a. 2 small projects on preliminary field work.
    b. Understand something about field work.

2. 35%
    a. Midterm test - fill in the blanks, definitions, short essay, long essay.
    b. Show understanding of terms, concepts. Be able to explain them. Agree or disagree with a point of view. Apply to Hong Kong.

3. 35%
    a. Final examination - more emphasis on essays.
    b. Same as for midterm test.

4. 10%
    a. Attendance and Participation.
    b. Show interest and effort.

Lecturer D:

1. ungraded
    a. 2 individual projects.
    b. Preparation for tutorial discussion.

2. 30%
    a. Midterm test - lecturer's own test. Multiple choice, matching on sociologists and their works, true or false.
    b. Show reading comprehension.

3. 30%
    a. Final examination - lecturer's own test. Same as midterm test.
    b. The same as midterm test.

4. 30-40%
    a. Term paper - narrow aspect of a concept in relation to Hong Kong.
    b. Application of a concept to a particular situation.

Lecturer E:

1.
    a. Midterm test - lecturer's own test - essay form.
    b. Knowledge of concepts, integration of ideas.

2.
    a. Final examination - lecturer's own test - essay form.
    b. Same as midterm test.

3.
    a. Group discussion on readings.
    b. Ability to understand content and comment on it.

4.
    a. Paper - one or two in a semester.
    b. Organization, using sources, quoting from sources.

3. The Levels of Weak Students' Cognitive Abilities

Question 6.a. asked the definition and qualities of weak students.

No firm description was given of weak students. Of the replies, eight items were given on conceptual and mental process problems. The two items on study habits appear to be largely a matter of effort. Three items were given in the category of English language problems. Overall, the interviewees stated that weak students mainly have cognitive problems, some have study habit problems, and some have English language problems.

The definition and qualities tended to merge in the lecturers' replies. The answers could be grouped into several categories.

Conceptual problems:

1. conceptual clarity problems: lack of ability to see the implications of choosing one definition rather than another in relation to an argument.

2. poor comprehension of concepts as shown in writing about theories.

Mental process problems:

1. poor organization and use of sources of information
2. not analytical, under or over-cited sources
3. poor discussion of readings in group work
4. couldn't apply abstractions
5. did not follow lectures (in Cantonese)
6. naive and could not learn what to do in tertiary studies

Study habit problems:

1. hadn't read textbook as shown by poor performance on tests
2. not prepared for class

English language problems:

1. copied sources in writing papers (attributed in part to language problem)
2. reading comprehension problem
3. problem in comprehending spoken English

Question 6.b. asked the factors which caused students to be weak.

Interviewees could not agree on the causes of weakness in students and actually did not seem to know the causes. A reply given was lack of interest which seemed to lecturers to stem from lack of effort in class work, or an apparent mismatch between students and their expectations of the discipline. (The latter could indicate a lack of cognitive skills or an attitudinal problem.) Under the category, lack of effort, the unwillingness to paraphrase seems in part to indicate an English language problem. Lack of initiative in asking questions was stated to relate in part to the general passivity of Hong Kong students and their fear of asking a foolish question which might result in a loss of face.

While it was fairly easy for interviewees to identify weak students by poor performance in class and in various forms of evaluation, the causes of their weaknesses were hard to discern. Since weak students seldom came to ask for help, interviewees interpreted their behaviour as lack of interest. Some interviewees suggested lack of cognitive ability due to poor previous training. Others deduced from passive class behaviour and the low numbers of students who sought help that lack of interest was the cause. It is felt that it was difficult for interviewees to know the causes of students' poor performance in their subject.

The replies cover a number of categories which are given below.

1. Lack of interest: 3 responses

    1 lecturer taught non-major students and felt students were required to take the subject but were not interested.

    2 lecturers taught sociology majors and felt a few had not thoroughly understood what the discipline involved when they chose sociology as a major.

2. Language problems in English: 2 responses

    1 lecturer felt this was only part of the cause
    1 lecturer felt a large proportion of weak student had language problems

3. Lack of effort: 2 responses

    1 lecturer felt a small proportion of weak students were lazy and would not spend time paraphrasing
    1 lecturer felt students did not take the initiative to ask questions

4. Lack of previous training: 2 responses

    1 lecturer felt students had not been trained in reasoning
    1 lecturer felt students had not been taught good study skills

5. Personal problems: 1 response

    The lecturer felt that family problems sometimes prevented students from doing well in studies.

6. Lack of correct values: 1 response

    The lecturer felt that students may not appreciate the value of higher education.

Question 7. asked if the help given to weak students was adequate.

Of the four interviewees who were asked the question, three replied that help was inadequate both because poor students seldom came for help and because the lecturers did not have time to give enough help. The fourth lecturer replied that help was adequate as the initiative should be with the students, but the lecturer had very few students who came for assistance. (For a detailed list, see Appendix D).

4. Levels of Cognitive Processes Needed to be Reinforced

Question 9. asked what English teachers can do to assist lecturers.

The interviewees responded in much the same way as the respondents to the questionnaire. The same skills were included: conceptual skills, and among language skills, reading, writing, and mechanics. The lecturers made a few comments of different types.

Lecturer A:
Students need general vocabulary, not vocabulary for a specific discipline.
They need help in learning how to get a theme from a passage.
They need aid in extracting scattered ideas from long sentences.
They need grammar.
They need simple sentences.
They need help in writing better sentences.

Lecturer B:
Students need help on the reasoning of the author.
Students can find the main idea but need help on how the author came to that conclusion.

Lecturer C:
Student need some help in English language.
Mainly they need conceptual help.

Lecturer D:
Problems are concept problems, not English language problems.
Students also need reading comprehension at a higher level.
They need general vocabulary.
They need simple sentence structure.
They need help in writing using a theme.

Lecturer E:
Students need general teaching not specific to a particular discipline.
The liberal studies approach is desirable.

III. Results in Analyzing the Past Remedial Reading Programme in Relation to This Study

Reference was made to the past remedial reading programme in order to discover which of the reading related cognitive skills of Bloom's Taxonomy had been taught. Comparison was made with the cognitive skills which the questionnaire and interview data indicated were needed. Consideration then was made of how to teach any of those cognitive skills which had not already been included in the reading programme.

A. General outline

The remedial reading programme had been part of an English Proficiency Programme which was divided into three skills: reading, writing and interactive skills (listening and speaking). Each one of the skills operated independently with little or no integration. The total class time for the programme was nine hours per week, giving three hours to each of the three skills. Although the semester was of fifteen weeks duration, because of a slow start due to administrative problems, college holidays, and the need to accommodate the other skills' requirements, the total hours of teaching in the remedial reading programme were 30.5 hours which were covered in thirteen weeks.

The basic outline of the remedial reading programme was as follows:

1. One class per week - 26 students each in 2 groups

   Most of the reading skills were first taught in the class period. The emphasis was on reading strategies. Materials which had been developed for the reading programme were taught in the class.

2. One structured lab per week - 8 to 14 students each in 5 groups

   Students used the SRA Rate Builders to increase their reading speed as a regular part of the structured lab. Two textbooks were used. Discussion of the homework exercises regularly occurred. Some working out of new exercises was done, and some homework was done when the work was completed early. There were five structured labs taught by two different people.

3. One free lab per week - up to 15 students

   Students were required to do all homework in any of several hours but were not required to come at a specific time. Students had to sign in for the time spent in free labs. A person was always in the lab to supervise and assist. Aside from homework exercises, students were assigned to do free reading in a variety of readers, newspapers, and magazines. Another type of free lab activity was use of computer programs which had been developed by the Language Centre.

B. Material Used

The textbook materials used were three units from Reading English for Academic Study and two units from Discovering Discourse (Book 3 of the Reading and Thinking series). A third book, Discourse in Action (Book 4 of the Reading and Thinking series) was used very little because it was considered to be too difficult for the students and more difficult than the text used in the writing segment of the programme. (Since the content of Discourse in Action is academic level material, in hindsight it now seems that more use should have been made of it.) SRA Rate Builders for speed reading, a limited number of computer programs, and free reading were all part of the reading programme. These activities were designed to develop the students' interest and confidence in reading by having them gain control over easier materials. Ten paragraphs and essays were prepared for the programme, using topics from current events. The difficulty of the passages in vocabulary and sentence structure was gradually increased. However, transfer of the skills taught in the programme did not occur satisfactorily when students used their major discipline textbooks for application in the reading class. Students were asked to find main ideas in their textbooks and guess the meaning of vocabulary from context, but could not readily do so. It was felt at the time that the reading programme did not adequately address the students' academic needs.

C. Analysis of Reading and Cognitive Skills

The reading and cognitive skills taught in the remedial reading programme were organized by analyzing each textbook and group of materials used. The reading skills were matched with cognitive skills, according to Bloom's Taxonomy of Educational Objectives - Cognitive Domain as modified to apply to reading for this study. A summary of the materials and cognitive skills is given (see Table 21 and 22). In addition, a detailed analysis of the materials and cognitive skills as well as a detailed list of assignments of the remedial reading programme divided by weeks and by types of class meeting, are given in the appendix (see Appendix E).

D. Discussion of the Tables

The results of the analysis show a limited number of cognitive skills used with each of the materials. The number of instances of activities using cognitive skills was calculated (see Table 21). The numbers could not be calculated for several materials. SRA Rate Builders, computer programms and free reading were used as students chose. (Some students completed over 50 Rate Builders, but most finished 35).

When the cognitive skills were added together (see Table 22), it was seen that Comprehension II (q.91) was the cognitive skill most frequently taught. Considering the additional instances from SRA, computer and free reading activities which were not calculated, comprehension of the overall meaning of a passage was strongly emphasized. The other aspects of Comprehension were also emphasized (Comprehension I, q.90, conversion of diagrams or symbols to other forms and Comprehension III, q.92, making inferences from a passage). Knowledge I (q.88) in perceiving the organization of a passage, and all types of Analysis received some attention.

It is clear from the data that the remedial reading programme mainly taught cognitive skills at the lower end of Bloom's Taxonomy. As it was not focused on a specific discipline because of the mixture of student disciplines in the classes, no principles of a given discipline were taught (Knowledge II, q.89). Application I (q.93) was not taught as well. In one case, Evaluation II (q.101) was used on a topic which students knew well through personal interest. With concentration on Knowledge and Comprehension, the skills of Application and Analysis have been largely neglected. These are important skills which have been found most necessary for weak students by this study.

Table 21

Summary of the Cognitive Skills Used in the Remedial Reading Programme

Text or Materials	Cognitive Skills	Question	Number of Instances
a. Reading English for Academic Study	Knowledge I	(88)	4
	Comprehension I	(90)	4
	Comprehension II	(91)	2
b. Discovering Discourse	Comprehension I	(90)	3
	Comprehension II	(91)	3
	Analysis I	(94)	2
	Analysis II	(95)	1
c. Discourse in Action	-----------------		
d. SRA Rate Builders	Comprehension II	(91)	varying
e. Computer Programs	Comprehension II	(91)	varying
f. Free Reading	Comprehension II	(91)	varying
g. Paragraphs & Essays	Comprehension II	(91)	9
	Comprehension III	(92)	6
	Analysis II	(95)	2
	Analysis III	(96)	4
	Evaluation II	(101)	1

Table 22

Summary of All Cognitive Skills Used in the Remedial Reading Programme

Cognitive Skill	Question	Total instances
Knowledge I	(88)	4
Comprehension I	(90)	7
Comprehension II	(91)	14+
Comprehension III	(92)	6
Analysis I	(94)	2
Analysis II	(95)	3
Analysis III	(96)	4
Evaluation II	(101)	1

Notes to Chapter 4

1. Seven questions, asking for additional responses ('Other, please specify' questions) were also part of the questionnaire. As the data did not produce meaningful information, the details are placed in Appendix B. The question numbers on the questionnaire are: 13, 31, 37, 78, 82, 86, 113.

2. The quantity of reading per week is at best only an estimate since page sizes, density and size of print vary tremendously. Lecturers could not reasonably be expected to know the number of words assigned; thus the request for the number of pages was made.

Chapter 5

Discussion

In this chapter only the most significant results which can lead to important insights will be discussed. Recommendations are given in relation to these findings, especially for English language teachers.

1. The need for the four lower levels of Bloom's Taxonomy

The most important finding from this study is that the skills of the four lower levels of Bloom's Taxonomy were most needed. (There were two exceptions which are discussed below.) They were most required by the lecturers and were poorly performed by the students, leaving a large gap which should be filled. This is an indication to English language teachers that the skills in Knowledge, Comprehension, Application and Analysis are the ones most needed and the ones which could be supplemented in ESL remedial reading programmes.

Since the findings showed that Synthesis and Evaluation were required very little by lecturers although they were performed relatively poorly, these skills can be largely omitted by English language teachers, and emphasis can be placed on the four lower levels of skills.

The results indicated that two skills of the four lower levels were less required by the lecturers, a finding which has significance for English language teachers. One of the skills, Comprehension I (the ability to convert diagrams and symbols into words or another form) suggests that some skills are important to a limited number of disciplines but not to all of them. English language teachers should be aware that differences can occur and be prepared to accommodate them. Students could be surveyed, as is also suggested later, to discover whether or not this skill is needed. The other skill, Analysis III, (the ability to analyze the organizational method of a reading passage) indicates that English language teachers should avoid over-emphasizing teaching the organizational method. If English language teachers convey methods of analysis of a reading passage into parts (Analysis I) and the understanding of the relationships of the parts (Analysis II), it may be sufficient. There is likely to be repetition in teaching Analysis III if the other two analysis skills have already been taught. Instead, the emphasis should be put on the function of the analyzed material in conveying meaning to the reader.

2. Small number of skills taught in the remedial reading programme

When the past remedial reading programme was analyzed for the skills of Bloom's Taxonomy, it was found that a limited number had been taught. Mainly, Comprehension II (ability to interpret the overall meaning of a reading passage) was taught. Other skills included Knowledge I, the other comprehension skills, and all of the Analysis skills, but they were all taught very seldom. Application was omitted. The teaching was mainly concentrated on the two lower levels of Bloom's Taxonomy. It is recommended that English language teachers consciously teach higher level cognitive skills in remedial reading programmes, especially Application and Analysis.

3. The high volume of reading English academic texts required.

The findings of questionnaire and interview data indicate that students were expected to read approximately 70 to 90 pages of academic materials, mainly textbooks, each week. For students who do not fully understand the content of the text, the large requirement in reading would be difficult. This result suggests to English language teachers in remedial reading programmes that the minimum of time be spent on easier reading texts which are below academic level. The syllabus should concentrate as soon as possible on academic textbook materials to help students cope with the large body of material they face daily. A large proportion of the material used in the reading programme should be from the faculty of the students (arts, business, science, social sciences). This would familiarize the students with thought and language patterns which are used in their major discipline texts.

4. The high percentage of weak students

According to the questionnaire data, the percentage of weak students in 1985 was 21% which would be 158 students of the first year class. This figure indicates that a sizable number of students have problems and need assistance. English language teachers need to be aware that the number of weak students far exceeds the numbers in remedial English programmes. As a result, English language teachers would develop curricula and materials suitable for future groups of students as well as current ones. In addition, English language teachers would try to enlist the cooperation of other organizations in the institution for supplementary help. This point is discussed in greater detail under point 5.

5. The causes of weakness in students being unknown

When the interviewees were asked the causes of their students' weakness, they did not know what they were. In order to be efficient and effective in remedial reading programmes, it is necessary to know if the causes are lack of interest, lack of ability, or other difficulties, such as family problems. This study was not designed to identify directly the cognitive skills of students. It is recommended that lecturers make an effort to build closer contacts with students. Departments could be encouraged to institute advisor systems, which already exist in some departments. English language teachers could then consult the advisors of students in remedial reading programmes for information.

Since interviewees complained of over-work, a more practical suggestion is to require all students identified as weak to see a counsellor in the counselling centre. The counsellor could report any pertinent information to the lecturer who recommended the student for counselling and to the English language teacher. In addition, cognitive abilities of entering students could be tested by a battery of tests as a matter of routine. The information would be available to counsellors who could give lecturers and English language teachers a composite report of the abilities and problems of students.

In order to teach skills which cannot easily fit into the curriculum, it is recommended that other organizations in the institution be asked for supplementary help. The counselling centre could run short courses in study skills. The audio-visual centre could offer short speed reading courses to teach basic methods and to orient students to altering reading speed according to the material being read. Reading all materials at the same speed has been identified as a reading difficulty for Hong Kong tertiary level students (Kvan 1969). Self-study packages could be obtained by these organizations which would help students with such skills as, chart and diagram reading, library use, skimming and scanning.

The need to cater for specific needs has been discussed under point 1. In order to make the minimum changes in reading curriculum to accommodate the needs of a few students in a mixed class from various disciplines, two steps can be followed. The first step is the short course or self-study package mentioned above which would give an orientation and basic skills awareness and/or training. The second step is a group of mini-courses which would be developed by English language teachers to meet specific needs, such as, converting diagrams and symbols into words or another form (Comprehension I). These could be planned as follow-up courses to the first group of courses and packages. These two steps would reduce the need for English language teachers to cover necessary skills at a lower level, allowing concentration on higher level and less discipline specific cognitive skills.

6. The uneven evaluation of students

The data of the questionnaire showed that lecturers required the four lower levels of Bloom's Taxonomy. However, when interviewees were asked about their evaluation systems, not all of the levels of skills were required by some interviewees. Some asked objective questions which were at the two lower levels of the taxonomy. The others did require all four lower levels of cognitive skills.

Since students cannot predict what cognitive skills will be required by lecturers, they must be prepared to use all levels of skills. The implications for English language teachers are that it is necessary to teach all four lower levels of cognitive skills. However, with every group of students, the English language teachers could survey them by questionnaire, class and individual discussion as to what is expected of them in daily reading assignments. Such a survey would help English language teachers to know which cognitive skills to emphasize and how to help students to apply what is taught in the remedial reading class to major discipline assignments.

7. The range of assistance given to weak students

According to the questionnaire data, considerable help was given in class to weak students when the lecturers adapted their teaching to make concepts clear and to make sure that their language presentation was clear. Other types of help were less frequently given, the most frequent of these being individual tutoring, and the least frequent referring students to basic materials at secondary school level for revision. The interviewees stated that the help they gave was inadequate for several reasons. Some of these related to students' lack of interest in seeking help and personality traits of shyness in tutorials. Others were related to the lecturers who felt that the initiative should come from the student and that tertiary level students should show independence and little dependence on the lecturer.

Since interviewees claimed to be too busy to give much more help, the same recommendation is given as in point 5, that students who are identified as weak be required to be counselled in the counselling centre, and participate in selected short courses, self-study packages or mini-courses to improve basic and specific skills. Since the amount of help to weak students is insufficient, the implications for English language teachers are that the remedial reading programme should be as efficient and applicable as possible to the students' major needs.

8. What English teachers can do to help

Lecturers suggested many skills in response to the open-ended question on what language skills English teachers should focus on to help their students. While some did respond that reading was desired, others mentioned the productive skills, writing and oral communication. The respondents seemed to be showing their general concern about the all around English language ability of their students.

It was encouraging that lecturers wanted English language teachers to assist them, indicating that cooperation is possible between the two groups. At the least, major discipline lecturers may be willing to give advice on the content of remedial reading programmes. English language teachers may have access to learning the requirements of major discipline lecturers and what the remedial reading programme can do specifically to help. This could be helpful for the design of syllabuses and the development of materials.

Suggestions for Curriculum Change and Implementation

The findings of the study indicated that significant curriculum changes could be made in ESL remedial reading programmes which would benefit weak students. A change of focus to the whole text approach and reinforcement of cognitive skills would emphasize the meaning of texts and how the mental processes in approaching texts can access meaning.

A list of the cognitive skills of Bloom's Taxonomy which should be reinforced was compiled after analyzing the data from the study and comparing it with the data from the past remedial reading programme. The list includes skills which were already used in the past programme but which need strengthening.

	Question	
1. Knowledge I	(88)	perceiving organization of facts
2. Knowledge II	(89)	understanding principles of the discipline
3. Comprehension II	(91)	interpreting the overall meaning of a passage
4. Comprehension III	(92)	making inferences
5. Application I	(93)	applying generalizations to specific instances
6. Analysis I	(94)	analyzing a passage into parts
7. Analysis II	(95)	analyzing the relationship of parts of a passage

Practical Implications

The results of the study show that several cognitive processes from Bloom's Taxonomy need to be reinforced in remedial reading programmes. Moreover, current schema theory and its applications have particular relevance for combination with the skills of Bloom's Taxonomy. Schema theory and the cognitive skills of Bloom's Taxonomy were seen to be compatible because they both emphasize activity in reading rather than concentration on discrete items. Schema theory suggests activity in moving from the top-level down and the bottom-level up simultaneously to find how overall schema and sub-schemata (macropropositions) and micropropositions interact to organize meaning. The cognitive skills suggest activity in processes, such as, making inferences, applying content to other situations, analyzing into parts. These cognitive skills also seek the overall schema and sub-schemata. Understanding the main meaning of the text and using cognitive process to gain detailed understanding of meaning are essential to tertiary level students of English as a second language. These students are daily being asked to perform these cognitive skills in reading academic texts. English teachers could assist weak students by reinforcing these necessary skills in remedial reading classes.

While in theory, the results are promising, practical application is not easy because of time limitations. A remedial reading programme is unlikely to be given more time than the one analyzed in this study: 30.5 hours in one semester, and perhaps much less time. Some of the basic and specific skills which weak students need could be obtained through short courses, self-study packages and specially made mini-courses prepared by English language teachers in order to reduce the range of skills to be covered in the reading programme. It is not possible to enlarge the content of the programme. The same amount of content must be selected, and approached and developed differently. Application of schema theory and cognitive skills of Bloom's Taxonomy can be used in place of drill work and work on basic skills. Another problem is that reading teachers need information on using schema and cognitive skills. One category of the micropropositions coincides with some of the language forms which have usually been taught: Reading strategies, such as skimming and scanning, are still useful. The language forms and reading strategies which reading teachers have used can often be incorporated in the process of using schema and cognitive skills. By providing models and detailed explanations of the new focus, the shift in approach can be conveyed to reading teachers. It is hoped that an easy transition can be made from past methods to a whole text - cognitive skills approach.

Suggested Procedures

Selection of reading materials

Materials should be chosen which can lend themselves easily to the study of Bloom's four cognitive skills: Knowledge, Comprehension, Application and Analysis. These materials should be genuine academic texts which are applicable to the students. While texts from the faculty of the students are desirable (such as, arts, social sciences, business, science), other materials are also desirable because students elect subjects in other disciplines from their majors for the sake of interest and general knowledge.

The whole text approach

Following the ideas of schema theorists and the research of Meyer, Carrell and Langer, it is suggested that simultaneous top-down and bottom-up processing be emphasized. The top-level structure and many smaller levels in Meyer's tree pattern should be considered as a model for analysis of academic text. The rhetorical patterns suggested by Meyer would help students to organize the content easily when the patterns are used. Meyer's overall rhetorical patterns are: causation (antecedent/consequent), comparison, collection, description (including definition), response (problem/solution).

Cognitive skills of Bloom's Taxonomy

The excerpts from academic texts should be analyzed by the English language teacher in order to prepare questions which utilize the cognitive skills of Bloom's Taxonomy. The particular cognitive skills identified in this study and others which seem appropriate or have been identified by major discipline lecturers could be used. The suggestions of Adams-Smith (1981) in using Bloom's Taxonomy to formulate questions could be followed.

A sample text and application of schema and Bloom's Taxonomy

The following text is a section of a longer passage which has been used with history majors. The passage was taken from an academic text. The whole text approach is an application of schema theory to the sample text. The top-down processing (part I) would be taught to students as would the micropropositions on language (part III). The micropropositions on ideas (part II) would have been analyzed by the teacher for reference but would be brought in as appropriate in discussing the questions which apply the cognitive skills of Bloom's Taxonomy. The questions have been written using the skills on the list in this section which were found to need reinforcement. It is hoped that samples such as these would give reading teachers an idea of how to implement the whole text - cognitive skills approach.

Text 1

Romanticism

Paragraph One

Romanticism is perhaps the vaguest of the many vague terms in the vocabulary of the historian. It is scarcely possible to find any characteristic shared by all the romantics of the first half of the nineteenth century, or to draw up any confession of faith to which they would all have subscribed. Nevertheless the word is not meaningless: it is possible to make a number of general statements about romanticism which are as well grounded as most generalizations. It meant most fundamentally of all a stressing of the individual, of his potentialities, of his autonomy as against society or any group within society, of the value of his feelings, spontaneous and unforced, as the yardstick against which the world must be measured. This meant that it erected against the ideals of moderation and elegance which had dominated much of the eighteenth century the new one of the exceptional spirit leading, and entitled to lead, the mediocrities by whom he inevitably found himself surrounded and, as an English painter convinced of his own genius put it, 'sent into the world not to obey laws but to give them'. This ideal was a deeply anti-egalitarian one. Allied with the Rousseauist belief that the emotions, especially those of love and grief, were felt more intensely and with greater purity by a minority of beaux esprits than by ordinary mortals, it contributed considerably to the essentially aristocratic atmosphere which marked much of the romantic movement during its greatest decades. It is notable how many of the literary leaders of that movement, at least until the 1830s--de Vigny, de Musset and Chateaubriand in France, Leopardi and Manzoni in Italy, Byron in England, Novalis and Arnim in Germany--were aristocrats by birth as well as in feeling. Though there were lesser examples of the ideal of genius (for example the composer Beethoven, who even during his lifetime was hero-worshipped by a limited circle of admirers) the supreme one was that of Napoleon I. More than any other figure in history he impressed on his own generation, and still more on succeeding ones, a new view of what the individual could be and accomplish. The enormity of his demands, even the speed and completeness of his downfall, seemed merely to add to his stature. Above all he seemed great because his achievements were so completely the product of his own individuality, because he was the most over-whelming of all examples of the selfmade man. His greatness, wrote Chateaubriand after his fall, lay supremely in the fact that 'he owed everything to himself, and without any other authority than that of his own genius made thirty-six million subjects obey him in an age when no illusions surrounded a throne'. That Napoleon should have aroused this romantic enthusiasism is one of the paradoxes of history; for he was himself very much a child of the Enlightenment. He thought in terms of reason and commonsense and had a utilitarian view of men as essentially rational and essentially the same everywhere. Nevertheless arouse an enthusiasm without precedent he did. Only after him had it been shown to the full what 'genius' might accomplish.

Text 1

Romanticism

Paragraph Two

The individual was a natural being and one unique in himself. Side by side with a stress on the individual, therefore, went a stress on nature, and in particular on the concrete and specific in nature. This had clearly several different roots. One may have been the new confidence inspired in man by the scientific progress of the eighteenth century, which meant that nature was ceasing to be seen as something normally hostile; whereas hitherto she had been regarded with fear or at least with awe it was now possible to look on her with wonder, a considerably more comfortable emotion. Another may have been the growing political power and social importance in western Europe of a middle class more vulnerable than aristocracies had traditionally been to the expansive emotions which natural scenery tended to arouse, and to their free expression. Another lay in the assertion, stemming principally from Rousseau, that man was a part of nature rather than of a corrupt society, and that peace and harmony could thus be achieved only by a kind of surrender of the self to nature and by close communion with her. Moreover the nature which the romantics admired was not that of seventeenth and eighteenth century classicism, smoothed, generalized and kept at arm's length. It was one made up of specific and individual entities, one in which each river, mountain, forest, had its own characteristics and individuality, just as in the human world each society and culture was unique.

from M.S. Anderson. 1972. The Ascendancy of Europe

Application of the whole text approach to the Romanticism text

Top-down processing: schema and macropropositions

I. - schema/top-level structure
    - definition of romanticism: rhetorical pattern (categorized by Meyer under description)

- sub-schema/second-level structure
    - characteristics of romanticism

- sub-schemata/third-level structures
    - individualism
    - feeling of oneness with nature

Bottom-up processing: micropropositions

II. - micropropositions: ideas - samples from Paragraph Two

- stress on the concrete and specific in nature
    - scientific progress
        - nature no longer feared
    - growth of the middle class
        - appreciation of emotions from natural scenery
    - Rousseauist idea that man is a part of nature
        - close communion to obtain peace & harmony
    - difference in interpretation from classicism
        - individualization of parts of nature as with humans

III. - micropropositions: language

- semantics
    - difficult vocabulary: autonomy, mediocrities, anti-egalitarian, paradoxes, vulnerable, beaux esprits.
- syntax
    - repeated use of interrupting phrases in sentences. These may be omitted in trying to understand the whole sentence.
- coherence
    - coherence words: moreover, another, nevertheless.

Application of cognitive skills of Bloom's Taxonomy to the Romanticism text

Knowledge I (q.88) perception of the organization of facts using the methodology of the discipline

What kind of problem occurs in trying to define the term "romanticism"?

Knowledge II (q.89) recognition and understanding of principles specific to the discipline

What are the three reasons given as some of the causes of the romantic stress on nature?

Comprehension II (q.91) interpreting the overall meaning of a reading passage

What are several specific points upon which romanticism can be contrasted with eighteenth century classicism?

Comprehension III (q.92) making inferences from a reading passage

What is implied about the kind of lives people lived before scientific progress brought information and understanding of nature?

Application I (q.93) applying generalizations to a new situation or problem

How do the lives of Hong Kong people contrast with the lives of people of the seventeenth century and of the eighteenth century in Europe in regard to the view of nature and information about it?

Analysis I (q.94) analysis of a reading passage into parts

Paragraph one can be be considered to be a long definition of "romanticism." Explain which parts function as qualifying concession, contrast with the past, examples of important romantic figures.

Analysis II (q.95) analysis of the relationships of parts of a reading passage

In paragraph one, explain how discussion of literary leaders helps to make clear the definition of "romanticism".

Application I (q.93) and Evaluation II (q.101)

Has individualism become an acceptable goal for Hong Kong people through the influence of westernization?

Further notes on the questions

Knowledge I (q.88) perception of the organizatio of facts using the methodology of the discipline

History is very careful to qualify its definitions and generalizations. The question has followed this historical method.

Knowledge II (q.89) recognition and understanding of principles specific to the discipline

History often uses the cause and effect organization of data. The question has followed this historical principle.

Comprehension II (q.91) interpreting the overall meaning of a reading passage

The passage tries to clarify the new concept of romanticism with another concept, that of eighteenth century classicism which is presumably a known concept.

Application I (q.93) and Evaluation II (q.101) applying generalizations to a new situation or problem; evaluation of a reading by other works in the discipline

This question seems an obvious one to ask students to show the influence of romanticism on twentieth century western culture and, in turn, on Hong Kong society. When this question was asked in relation to this passage, application was made to Hong Kong, but evaluation of the concept of individualism was also done in relation to Hong Kong society and Chinese tradition.

Chapter 6

Conclusions

This study investigated the cognitive skills related to reading which were required of tertiary level Hong Kong students for success in their major disciplines. Of particular concern were the students in ESL remedial reading programmes who need assistance which will help them directly to meet the reading requirements of their major discipline subjects. The results of this investigation are significant for curriculum change and materials design.

Summary of the findings

1. The main finding of the study was that the four lower levels of Bloom's Taxonomy of Educational Objectives were most needed by weak students. The lecturers required these skills most and found that weak students performed poorly on them. These cognitive skills were Knowledge, Comprehension, Application and Analysis. It is recommended that these skills be reinforced in ESL remedial reading programmes to help the students develop essential skills which are applicable to their academic study.

2. In comparing the syllabus of the past ESL remedial reading programme with the list of required cognitive skills, it was found that only the two lower levels of skills were emphasized in the reading programme. It is recommended that the skills of Application and Analysis be added as an important part of the curriculum of ESL remedial reading programmes.

3. The volume of required academic level reading, mainly textbooks, was approximately 70 to 90 pages per week. It is recommended that ESL remedial reading programmes emphasize academic textbook materials similar to those being read by students in their major disciplines. By emphasizing thought patterns and language patterns in these texts, English language teachers may help students to recognize and comprehend the patterns in their required reading, therefore helping them to transfer skills from the remedial reading programme to the study in their major disciplines.

4. The number of weak students in the first year class was estimated to be 21% or 158. When English language teachers know the magnitude of the problem they will be further motivated to develop curricula and materials which will be useful for future groups of students and will seek cooperation of other institutional services in offering short courses and self-study packages in basic and specific skills.

5. It was found that lecturers did not know the causes of students' weaknesses although they could identify the weak students by their poor performances. It is recommended that closer contacts between lecturers and students be developed through an advisor system. In addition, weak students should be required to be counselled to allow counsellors to gain information about problems which can be reported to lecturers and English language teachers. Moreover, weak students should be required to take selected short courses or self-study packages from the counselling centre or audio-visual centre. Following these, students could take mini-courses designed by English language teachers to teach specific skills needed by some disciplines. This would make it

possible to concentrate on less discipline specific and higher level cognitive skills.

6. It was discovered that lecturers do not all require the four lower levels of Bloom's Taxonomy in their evaluation processes. However, students cannot in advance know what cognitive skills will be required. It is recommended that English language teachers adapt the emphasis in the teaching of cognitive skills to accommodate the requirements of students' classes.

7. There was found to be a range of types of assistance given to weak students by the lecturers, and the assistance was felt to be inadequate. It is recommended that English language teachers understand that the help they give students is important and that they try to make the remedial reading programme directly applicable to the students' needs.

8. It was found that lecturers were interested in having English language teachers assist their students in many ways. It is recommended that English language teacher enlist the cooperation of major discipline lecturers to learn their requirements in order to improve curriculum development.

Limitations of the study

1. It has been thought that the use of questionnaires presents problems because the data is self-reported and may not always be accurate. However, using a questionnaire was perhaps the only direct means of obtaining the information on the lecturers' requirements.

2. The interviewing of colleagues requires caution and delicacy. Interviewees may feel threatened and not want their teaching ability to be thought inadequate. The interviewer must realize that there are limitations on the extent of information which can be obtained.

3. An omission in the data is the length of teaching experience of the respondents to the questionnaire. A comparison of the data from more experienced and less experienced lecturers might have given interesting information.

4. No students were included in the study because of the limitation of time in general and for development of a research instrument. Student opinion might have given insight on lecturers' responses.

5. The numbers of respondents to the questionnaire were relatively small and because of uneven distribution of responses in faculties, it was not possible to discover if there were any differences between faculty groups.

Future research

Among the future research projects which would be useful in giving further information are the following.

1. A questionnaire given to students to gather their perceptions on the reading related cognitive skills required in major disciplines and the perceptions of students' own weaknesses in cognitive skills could be used to ver ify (confirm/disconfirm) the lecturers' data. It would also give insight into the way in which students view their intellectual requirements.

2. Tests could be given to students to discover their reading skills and cognitive ability. Some of the tests could be standardized tests for ESL students in North America or the United Kingdom. These tests could give comparative information among students and with ESL students abroad whose requirements might be different. Interpretation of results would have to be done cautiously but could give some idea of students' abilities.

3. An investigation of examinations given by lecturers and how they were graded would give useful information on the actual requirements. Data on the cognitive process required in questions, the basis on which the answers were graded, and what compromises were made, if any, would give more information on the standards required.

4. A large-scale research project, replicating much of this study could be done, by canvassing the opinion of lecturers grouped by disciplines in other tertiary institutions in Hong Kong. Similarities and differences in various disciplines might be shown if the population were large enough.

5. Evaluation of this approach to remedial reading should be done by the pre-test, post-test method, using validated reading and cognitive abilities tests. The use of a control group, if possible, would assist in the evaluation process by giving comparative information. Additional evaluative data could be obtained from the students' opinions, their major discipline lecturers, and the students' academic progress as measured by their lecturers.

Closing statement

The findings in this study are tentative and need substantiation through further research. Still, they are of interest to English language teachers because they suggest a way to improve ESL remedial reading programmes. Through the whole text approach, the use of schema theory, combined with the reading related cognitive skills of Bloom's Taxonomy, the emphasis would be on meaning and the functions of the different levels in the text to achieve the meaning. Instead of concentrating on traditional teaching of language forms, the reading teacher would convey the inter-relation of all parts of the text, the top-down, bottom-up interactive process. In order to use the whole text approach, reading teachers would have to change their emphasis from a microstructure to a macrostructure approach. It is hoped that with a thorough understanding of the interactive processes and ample opportunity for practice on academic level text, the students would be able to apply what they learned in the remedial reading class to their major discipline textbooks. If this could be accomplished, English language teachers would have made a significant contribution in helping weak students to improve their skills and to move toward attainment of academic success.

Appendix A Questionnaire

Dear Colleague,

In order to obtain information for planning future English language subjects, I am sending you this questionnaire. The questionnaire asks what were the reading skills that your first year students needed last year in order to pass your subject satisfactorily. It also asks for detailed information on the reading requirements for those students in your subject, as well as their reading related problems.

If you taught more than one first year subject, please select one which seems typical to you as the basis for your answers. If you are unsure of some answers in relation to last year, please answer on the basis of your general experience in this College with first year students.

Thank you for your assistance with this rather long questionnaire. Your answers will be very helpful for new curriculum planning in English language subjects.

Please return the questionnaire by campus mail as early as possible within the next two weeks.

Sincerely yours,

Barbara N. Costin

(Mrs.) Barbara Costin
English Department

P. S.

I am enclosing a small token of my appreciation of your time and effort in filling out this questionnaire.

Merry Christmas —— a little early —— and thank you again!

QUESTIONNAIRE

ON ACADEMIC READING REQUIREMENTS IN ENGLISH

All questions refer to the first year subject you have selected, your reading requirements for that subject, and your first year students for last year, 1984-85.

(Numbers for Data Analysis)

1 1. Name of Subject:

2 Course Code:

3 2. Did you use a textbook which students were required to buy? ____ yes

4 Please tick. ____ no

3. If you answered yes to question 2, please give the

5 Title:

6 Author(s):

4. Whether or not you used a required textbook, please answer this question. Please indicate how much you required your students to use each of the types of materials listed by circling the appropriate response on the scale. On the scale, 1 indicates no frequency of use required, while 4 indicates great frequency of use required.

		no frequency			great frequency
7	reference books (excluding a required textbook)	1	2	3	4
8	journal articles	1	2	3	4
9	newspaper articles	1	2	3	4
10	laboratory manuals	1	2	3	4
11	audio/videotaped lectures/discussions	1	2	3	4
12	videotaped experiments	1	2	3	4
13	other,please specify ________________	1	2	3	4

Please answer each of the following questions using the scale below. On the scale, 1 indicates no importance, while 4 indicates extreme importance. Please circle the appropriate response.

		not at all important			extremely important
14	5. State the importance of reading comprehension of English language materials to your subject	1	2	3	4
15	6. State the importance of the ability to interpret charts, maps, diagrams, etc. in reading materials in helping comprehension.	1	2	3	4
16	7. State the importance of questions given in reading materials, particularly at the ends of chapters, in helping comprehension.	1	2	3	4
17	8. State the importance of the ability to interpret the meaning of symbols and numbers in reading materials to your subject.	1	2	3	4

18 9. On the average during last year, what was the total number of pages per week of all types of English language reading materials which you assigned to your students as required reading? ____ pages per week

19 10a. Did you ask your students to read materials in Chinese? ____ yes

20 Please tick. ____ no

If you answered no to question 10a., please go on to question 11. Otherwise, please continue with question 10b.

10b. Please tick the appropriate percentage for each of the 3 categories below.

21 1) percentage of translations or summaries of already assigned English materials

____ 0% ____ 20% ____ 40% ____ 60% ____ 80% ____ 100%

____ 10% ____ 30% ____ 50% ____ 70% ____ 90%

22 2) percentage of materials supplementary to assigned English language materials

____ 0% ____ 20% ____ 40% ____ 60% ____ 80% ____ 100%

____ 10% ____ 30% ____ 50% ____ 70% ____ 90%

23 3) percentage of all assigned readings which were in Chinese

____ 0% ____ 20% ____ 40% ____ 60% ____ 80% ____ 100%

____ 10% ____ 30% ____ 50% ____ 70% ____ 90%

11. Please indicate the purpose for which you gave a reading assignment. Answer each of the items below as to frequency of purpose, using the scale below. On the scale, 1 indicates no frequency of the purpose, while 4 indicates great frequency of the purpose. Please circle.

	The purpose of the reading assignment was for students	no frequency			great frequency
24	to obtain the basis for a written report, research paper or essay	1	2	3	4
25	to prepare for class discussion	1	2	3	4
26	to prepare to give oral answers to pre-assigned questions	1	2	3	4
27	to show completion of assignment by writing a summary	1	2	3	4
28	to obtain general information	1	2	3	4
29	to follow your emphasis of points by writing answers to questions	1	2	3	4
30	to prepare for laboratory work	1	2	3	4
31	other, please specify ______________________________	1	2	3	4

12. Please indicate the uses of the textbook or main source of information assigned to students last year. Answer each of the items below as to frequency of use by you, using the scale below. On the scale, 1 indicates no frequency of use by you, while 4 indicates great frequency of use by you. Please circle the appropriate response.

	How often was your main text or main source of information used	no frequency			great frequency
32	as the general basis of knowledge	1	2	3	4
33	as a supplement to lectures	1	2	3	4
34	as a way of gaining access to supplementary materials	1	2	3	4
35	as an initiator for group discussion	1	2	3	4
36	as a reference for laboratory work	1	2	3	4
37	other, please specify ______________________________	1	2	3	4

This questionnaire will now focus on the weak students in your subject last year. For the purposes of this questionnaire, "weak students" mean those who did not easily meet or did not meet satisfactory achievement standards. Please answer the following questions on your weak students.

13. Please tick the percentage of weak students in your first year subject last year.

38 ____ 0% ____ 20% ____ 40% ____ 60% ____ 80% ____ 100%
____ 10% ____ 30% ____ 50% ____ 70% ____ 90%

14. In considering your weak students from last year, please indicate your degree of agreement with each of the statements below. On the scale, 1 indicates that you agree with the statement, while 4 indicates that you disagree with the statement. Please circle the appropriate response.

		agree			disagree
39	My weak students could study independently of me.	1	2	3	4
40	My weak students lacked sufficient English language reading ability for tertiary level academic study.	1	2	3	4
41	My weak students had enough Chinese language reading ability for tertiary level academic study.	1	2	3	4
42	My weak students knew the basic concepts in my field.	1	2	3	4
43	My weak students could not apply abstractions to concrete situations.	1	2	3	4
44	My weak students could produce a new plan of work by synthesizing elements of materials already studied.	1	2	3	4
45	My weak students did not understand high-level non-verbal forms (e.g. mathematical formulas).	1	2	3	4
46	My weak students depended heavily upon notes given in hand-outs and expected "spoon-feeding."	1	2	3	4
47	My weak students did not know the basic principles of the discipline they were studying.	1	2	3	4
48	My weak students could develop and alter an abstract theory which explains data.	1	2	3	4
49	My weak students had adequate previous training in the discipline they were studying.	1	2	3	4
50	My weak students did not have the ability to translate one form of communication into another (e.g. give a written explanation of a table or chart).	1	2	3	4

15. In recalling your weak students' reading abilities, please indicate your degree of agreement with each of the statements below. On the scale, 1 indicates that you agree with the statement, while 4 indicates that you disagree with the statement. Please circle the appropriate response.

		agree			disagree
51	My weak students did not have enough vocabulary knowledge to read tertiary level materials in my field.	1	2	3	4
52	My weak students understood meaning in reading passages when it was not directly stated.	1	2	3	4
53	My weak students could not identify the parts of a reading passage(main idea, detailed examples,etc.).	1	2	3	4
54	My weak students could evaluate the logical consistency of reading materials.	1	2	3	4
55	My weak students could remember specific content from a reading passage for an extended period of time.	1	2	3	4
56	My weak students comprehended the main topic and viewpoint in a reading passage.	1	2	3	4
57	My weak students could not perceive the interconnection between parts of a reading passage.	1	2	3	4
58	My weak students could evaluate reading materials according to major works in the field.	1	2	3	4
59	My weak students could not understand the general meaning of a reading passage.	1	2	3	4
60	My weak students could not recognize the systematic arrangement of parts of a reading passage.	1	2	3	4
61	My weak students could not understand implied meanings in reading passages.	1	2	3	4
62	My weak students could analyze the elements of a reading passage.	1	2	3	4
63	My weak students could not use parts of a reading passage to compose a new piece of writing.	1	2	3	4

16. In order to help your weak students to understand the readings you assigned, what, if anything, did you do? Please indicate the frequency of your use of each of the items below by circling the appropriate response. On the scale, 1 indicates no frequency of use, while 4 indicates great frequency of use.

		no frequency			great frequency
64	asked them to revise A-level materials to improve basic knowledge	1	2	3	4
65	explained the ideas in Cantonese	1	2	3	4
66	explained the sentence structure in Cantonese	1	2	3	4
67	explained the text organization in Cantonese	1	2	3	4
68	explained the vocabulary in Cantonese	1	2	3	4
69	explained the ideas in English	1	2	3	4
70	explained the sentence structure in English	1	2	3	4
71	explained the text organization in English	1	2	3	4
72	explained the vocabulary in English	1	2	3	4
73	directed them to reference books	1	2	3	4
74	tutored them individually	1	2	3	4
75	assigned them group work to clarify a topic	1	2	3	4
76	had them do laboratory or practical work	1	2	3	4
77	gave them guided questions	1	2	3	4
78	other,please specify ____________________	1	2	3	4

17. When you taught your first year students, did you adapt your teaching to accommodate the weak students? Please indicate the frequency of your use of adaptation techniques for each item in the two groups given by circling the appropriate response. On the scale, 1 indicates no frequency of use, while 4 indicates great frequency of use.

		no frequency			great frequency
	Language adaptation				
79	simplified your language	1	2	3	4
80	slowed down the speed of presentation	1	2	3	4
81	used repetition often	1	2	3	4
82	other,please specify ______________________	1	2	3	4
	Conceptual adaptation				
83	defined terms more carefully	1	2	3	4
84	gave additional background information	1	2	3	4
85	explained concepts more carefully	1	2	3	4
86	other,please specify ______________________	1	2	3	4

18. Please indicate your degree of agreement with each of the items below by circling the appropriate response. On the scale, 1 indicates that you agree with the statement, while 4 indicates that you disagree with the statement.

	To be successful in my subject, students	agree			disagree
87	had to be able to locate factual information.	1	2	3	4
88	did not need to be able to perceive the organization of facts using the methodology of my discipline.	1	2	3	4
89	needed to be able to recognize and understand principles specific to my discipline.	1	2	3	4
90	had to be able to convert diagrams or symbols into words or to interpret them in another form.	1	2	3	4
91	did not need to be able to interpret the overall meaning of a reading passage.	1	2	3	4
92	did not have to be able to make inferences from a reading passage.	1	2	3	4
93	had to be able to apply generalizations to a new situation or problem.	1	2	3	4
94	did not need to be able to analyze a reading passage into parts.	1	2	3	4
95	needed to be able to analyze the relationships of parts of a reading passage.	1	2	3	4
96	had to be able to analyze the organizational method of a reading passage.	1	2	3	4
97	did not need to be able to use elements given in a reading passage to formulate an original communication.	1	2	3	4
98	did need to be able to develop a new plan or proposal.	1	2	3	4
99	did not need to be able to formulate and modify a hypothesis.	1	2	3	4
100	had to be able to judge a reading passage for internal consistency and accuracy.	1	2	3	4
101	did not need to be able to judge a reading passage by other works in the discipline.	1	2	3	4

19. How important in your opinion is it that English language teachers focus on each of the items below? English language teachers are teachers such as those in the English Department or Language Centre. On the scale, 1 indicates that you think the item is of no importance for English teachers to focus on, while 4 indicates that you think the item is extremely important for them to teach your students. Please circle your response.

		not at all important			extremely important
102	grammar rules	1	2	3	4
103	spelling	1	2	3	4
104	general vocabulary	1	2	3	4
105	vocabulary specific to your discipline	1	2	3	4
106	complex sentence structure	1	2	3	4
107	paragraph and essay organization	1	2	3	4
108	sentence connections and transitions	1	2	3	4
109	ways to find specific information in a reading passage	1	2	3	4
110	ways to interpret an author's statements	1	2	3	4
111	ways to analyze a reading passage	1	2	3	4
112	ways to evaluate a reading passage	1	2	3	4
113	other,please specify ______________________________	1	2	3	4

20. Are there any particular language skills which you would like English
114 language teachers to focus on, in order to help your students?

21. Are there any particular thinking skills which you would like English
115 language teachers to focus on, in order to help your students?

22. Other comments
116

Interview Protocol

1. Textbook

   Why a textbook was/not selected

   Why that textbook was selected

   How much of the readings are in the textbook

2. Other materials

   % of other readings in references, journals and to what purpose

3. Importance of reading skills to the course

4. Volume of readings assigned

5. Chinese materials and why/not

6. Weak students
   Definition

   Qualities

   Causes

7. Help given to weak studdnts- adequate?

8. Cognitive skills required
   Examples

   Evaluation system related to readings, esp. exams, projects, papers.

9. What English teachers can do to assist

10. Comments

Bloom's Taxonomy Summarized

Synopsis of the Taxonomy of Educational Objectives: Cognitive Domain

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Knowledge

1.00 *Knowledge.* Recall of information
1.10 Knowledge of specifics. Emphasis is on symbols with concrete referents.
  1.11 Knowledge of terminology.
  1.12 Knowledge of specific facts.
1.20 Knowledge of ways and means of dealing with specifics. Includes methods of inquiry, chronological sequences, standards of judgment, patterns of organization within a field.
  1.21 Knowledge of conventions: accepted usage, correct style, etc.
  1.22 Knowledge of trends and sequences.
  1.23 Knowledge of classifications and categories.
  1.24 Knowledge of criteria.
  1.25 Knowledge of methodology for investigating particular problems.
1.30 Knowledge of the universals and abstractions in a field. Patterns and schemes by which phenomena and ideas are organized.
  1.31 Knowledge of principles and generalizations.
  1.32 Knowledge of theories and structures (as a connected body of principles, generalizations, and interrelations).

Intellectual Skills and Abilities

2.00 *Comprehension.* Understanding of material being communicated, without necessarily relating it to other material.
  2.10 Translation. From one set of symbols to another.
  2.20 Interpretation. Summarization or explanation of a communication.
  2.30 Extrapolation. Extension of trends beyond the given data.
3.00 *Application.* The use of abstractions in particular, concrete situations.
4.00 *Analysis.* Breaking a communication into its parts so that organization of ideas is clear.
  4.10 Analysis of elements. E.g., recognizing assumptions.
  4.20 Analysis of relationships. Content or mechanical factors.
  4.30 Analysis of organizational principles. What holds the communication together?
5.00 *Synthesis.* Putting elements into a whole.
  5.10 Production of a unique communication.
  5.20 Production of a plan for operations.
  5.30 Derivation of a set of abstract relations.
6.00 *Evaluation.* Judging the value of material for a given purpose.
  6.10 Judgments in terms of internal evidence. E.g., logical consistency.
  6.20 Judgments in terms of external evidence. E.g., consistency with facts developed elsewhere.

Source: D. A. Payne. 1974. The Assessment of Learning.

Appendix B Data on Additional Questions on Questionnaire

In addition, when lecturers were asked to add any other types of materials they used (question 13), seventeen responded with twelve different responses. The mean of frequency of use was 2.875. Out of the total group, the percentage of respondents to this question was 31.481%.

An additional question (question 31), inquired about any other purposes which respondents would like to supply. Of the total respondents, seven lecturers (12.936%) supplied a response. Of these, five different answers were given with a mean of 3.857, showing high frequency of use by the seven respondents.

Lecturers were asked to add any further uses of the main text (question 37). Of the total respondents, four lecturers (7.407%) supplied a response. The mean frequency was 3.333, showing high frequency of use by the four respondents.

When lecturers were asked to specify any other types of help given to weak students (question 78), there were three responses, which was 5.556% of the total respondents. The mean of the frequency was 3.00, showing a high frequency of use by those three respondents.

The lecturers were asked to report other language adaptations (question 82). There were five responses which constituted 9.259% of the respondents. The mean of the responses was 2.00, indicating a low frequency of use by the five respondents.

Lecturers were asked to report other conceptual adaptations which they made (question 86). There were three responses, or 5.556% of the respondents. The mean of the responses was 3.50, indicating a high frequency of use by the three respondents.

Lecturers were asked to add any other items which they wished language teachers to focus on (question 113). There were six responses or 11.111% of the total respondents. The mean was 3.667, showing importance of their suggestions to the six respondents.

'Other, please specify' questions

Question 13 Other materials used by lecturers

		$\bar{X}$ frequency of use
(4)	films	2.25
	television programmes	2.00
	filmstrips with audio-tapes	3.00
	book reviews	4.00
(2)	literary materials	3.50
	news magazines	----
	historical material	2.00
(2)	photocopied notes	3.00
	dictionaries	2.00
	on-line computer manuals	3.00
	business games & cases	4.00
	contents of an in-basket	4.00

Grand $\bar{X}$ = 2.875

total respondents 16

percentage who responded 31.481%

Question 31 Other purposes for reading assignments

		$\bar{X}$ frequency of use
	to prepare for field study or visit	3.00
	to answer optional study questions	4.00
	to see how journalists write the news	4.00
(2)	to prepare for examinations	4.00
(2)	to improve reading comprehension skills	4.00

Grand $\bar{X}$ = 3.857

total respondents 7

percentage who responded 12.963%

'Other, please specify' questions

Question 37 Other uses of main text

	$\bar{X}$ frequency of use
for field study	3.00
as a source of worked problems	----
for doing laboratory work	4.00
as a source of written exercises	3.00

Grand $\bar{X}$ = 3.333

total respondents 4

percentage who responded 7.407%

Question 78 Other types of help given to weak students

	$\bar{X}$ frequency of use
discussed problems with weak students and/or advisor	2.00
gave frequent tests	4.00
asked them to do more exercises	----

Grand $\bar{X}$ = 3.00

total respondents 3

percentage who responded 5.556%

'Other, please specify' questions

Question 82 Other language adaptations

	$\bar{X}$ frequency of use
asked students to discuss among themselves for 5 minutes	2.00
allowed the use of Chinese	----
asked a student to restate in Cantonese for others to hear	2.00
adapted style of lessons to focus on group work	----
retaught some parts	----

Grand $\bar{X}$ = 2.00

total respondents 5

percent of respondents 9.259%

Question 86 Other conceptual adaptations

	$\bar{X}$ frequency of use
used more diagrams and illustrations on the blackboard	3.00
explained with examples	----
gave live examples, applications	4.00

Grand $\bar{X}$ = 3.50

total respondents 3

percent of respondents 5.556%

'Other, please specify' questions

Question 113 Other items which English language teachers should focus on

	$\bar{X}$ importance
plagiarism	4.00
listening	3.00
more analysis, less rules and writing techniques	----
simple and effective English, how to make summaries	4.00
cultural differences (concepts, attitudes)	----
writing methodologies	----

Grand $\bar{X}$ = 3.667

total respondents 6

percent who responded 11.111%

Question 116 Other comments

Social Sciences

1. the unusual nature of the course in journalism may make responses unusual

Sciences

2. perhaps language needs of science students could be specifically treated in future surveys

Business

3. desires emphasis on writing introductions and conclusions which can show ideas fully
4. language is not so important in this subject because it is quantitative; perhaps this response should be grouped with other similar subjects.
5. desires students to learn to write essays with correct mechanical form: punctuation, word usage

English

6. perhaps English language teachers should not be given this questionnaire

Appendix C Data on Analysis of Variance

Items Showing Significant Differences on Analysis of Variance Tests

a. Grouping by 2 groups

Question	$\bar{X}$ Arts & Eng	$\bar{X}$ Sociology & Social Sci	Grand $\bar{X}$	F	Sig of F	Multiple R	Mult. R^2
Performance	2.22	1.87	2.02	4.341	.050	.422	.178
Synthesis	(9)	(13)	(22)				

Number of respondents in parentheses

b. Grouping by 4 groups

Question	$\bar{X}$ Arts & Eng	$\bar{X}$ Sociol. & Soc. Sci.	$\bar{X}$ Sci.	$\bar{X}$ Bus.	Grand $\bar{X}$	F	Sig of F	Mult. R	Mult. R^2
100	2.93	3.33	2.67	1.50	2.80	5.846	.002	.525	.276
	(14)	(15)	(15)	(6)	(50)				
Requirement	2.71	3.12	2.65	1.67	2.74	3.220	.034	.455	.207
Evaluation	(12)	(13)	(13)	(13)	(41)				

c. Grouping by 6 groups

Question	$\bar{X}$ Arts	$\bar{X}$ English	$\bar{X}$ Soc. Sci.	$\bar{X}$ Sociology	$\bar{X}$ Science	$\bar{X}$ Business	$\bar{X}$ Grand	F	Sig of F	Mult. R	Mult. R^2
98	2.29	3.57	2.80	3.40	2.40	2.17	2.70	2.642	.036	.481	.231
	(7)	(7)	(10)	(5)	(15)	(6)	(50)				
100	2.57	2.14	3.20	2.60	2.73	1.83	2.60	3.982	.005	.558	.312
	(7)	(7)	(10)	(5)	(15)	(6)	(50)				

Analysis of Variance - 2 - groups Performance Bloom's Taxonomy of Educational Objectives

Question	Group 1 $\bar{X}$ Arts & Eng	2 $\bar{X}$ Social Science & Sociology	Grand $\bar{X}$	F	Sig. of F	Multiple R	Mult. R^2
42	2.40 (10)	2.08 (13)	2.22 (23)	.809	.379	.193	.037
43	2.40 (10)	2.00 (13)	2.17 (23)	1.158	.294	.229	.052
44	2.30 (10)	1.85 (13)	2.04 (23)	3.138	.091	.361	.130
48	1.90 (10)	1.85 (13)	1.87 (23)	.052	.821	.050	.002
50	2.62 (13)	2.21 (14)	2.41 (27)	1.555	.224	.242	.059
52	2.15 (13)	2.07 (14)	2.11 (27)	.078	.782	.056	.003
53	2.08 (13)	2.21 (14)	2.15 (27)	.208	.652	.091	.008
54	2.00 (13)	2.14 (14)	2.07 (27)	.294	.593	.108	.012
56	2.23 (13)	2.14 (14)	2.19 (27)	.081	.778	.057	.003
57	2.08 (13)	2.00 (13)	2.04 (26)	.049	.827	.045	.002
58	2.08 (13)	2.15 (13)	2.12 (26)	.045	.834	.043	.002
60	2.31 (13)	2.23 (13)	2.27 (26)	.083	.775	.059	.003
62	2.00 (14)	2.14 (14)	2.07 (28)	.317	.578	.110	.012
63	2.21 (14)	1.86 (14)	2.04 (28)	1.650	.210	.244	.060

Analysis of Variance - 2 - groups Performance Bloom's Taxonomy of Educational Objectives

Question	Group 1 $\bar{X}$ Arts & Eng	2 $\bar{X}$ Social Science & Sociology	Grand $\bar{X}$	F	Sig. of F	Multiple R	Mult. R^2
88	3.15 (13)	3.20 (15)	3.18 (28)	.017	.896	.026	.001
89	3.38 (13)	3.40 (15)	3.39 (28)	.003	.960	.010	.000
90	2.23 (13)	2.60 (15)	2.43 (28)	.825	.372	.175	.031
91	3.54 (13)	3.40 (15)	3.46 (28)	.167	.686	.080	.006
92	3.62 (13)	3.40 (15)	3.50 (28)	.572	.456	.147	.022
93	3.14 (14)	3.40 (15)	3.28 (29)	.607	.443	.148	.022
94	3.43 (14)	3.07 (15)	3.24 (29)	1.783	.193	.249	.062
95	3.36 (14)	3.20 (15)	3.28 (29)	.274	.605	.100	.010
96	3.00 (14)	2.80 (15)	2.90 (29)	.349	.560	.113	.013
97	3.29 (14)	3.00 (15)	3.14 (29)	.765	.389	.166	.028
98	2.93 (14)	3.00 (15)	2.97 (29)	.048	.829	.042	.002
99	2.57 (14)	3.00 (15)	2.79 (29)	1.309	.263	.215	.046
100	2.93 (14)	3.33 (15)	3.14 (29)	1.754	.196	.247	.061
101	2.36 (14)	3.00 (15)	2.69 (29)	3.481	.073	.338	.114

Analysis of Variance - 2 - groups Items Grouped Under 6 Categories
Bloom's Taxonomy of Educational Objectives - Requirements & Performance

Question	Group 1 $\bar{X}$ Arts & Eng	2 $\bar{X}$ Social Science & Sociology	Grand $\bar{X}$	F	Sig. of F	Multiple R	Mult. R^2
Req Know	3.42 (12)	3.30 (15)	3.35 (27)	.257	.616	.101	.010
Req Com	3.06 (12)	3.13 (15)	3.10 (27)	.135	.716	.073	.005
Req App	3.08 (12	3.40 (15)	3.26 (27)	.815	.375	.178	.032
Req Ana	3.28 (13)	3.02 (15)	3.14 (27)	.937	.342	.190	.036
Req Syn	2.89 (12)	3.00 (15)	2.95 (27)	.219	.644	.093	.009
Req Eva	2.71 (12)	3.12 (13)	2.92 (25)	2.425	.133	.309	.095
Per Know	2.22 (12)	2.10 (13)	2.16 (25)	.259	.616	.106	.011
Per Com	2.30 (12)	2.11 (13)	2.20 (25)	.705	.410	.172	.030
Per App	2.25 (12)	2.00 (13)	2.12 (25)	.492	.490	.145	.021
Per Ana	2.19 (12)	2.10 (13)	2.15 (25)	.203	.656	.094	.009
Per Syn	2.22 (9)	1.87 (13)	2.02 (22)	4.341	.050	.422	.178
Per Eva	2.33 (9)	2.15 (13)	2.23 (22)	.354	.559	.132	.017

Analysis of Variance - 3 - groups Performance Bloom's Taxonomy of Educational Objectives

Question	Group 1 $\bar{X}$ Arts & Eng	2 $\bar{X}$ Soc. Sci. & Sociol.	3 $\bar{X}$ Science	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
42	2.40	2.08	1.93	2.11	.792	.461	2.110	.045
	(10)	(13)	(14)	(37)				
43	2.40	2.00	2.00	2.11	.752	.479	.206	.042
	(10)	(13)	(14)	(37)				
44	2.30	1.85	1.64	1.89	2.901	.069	.382	.146
	(10)	(13)	(14)	(37)				
48	1.90	1.85	1.71	1.81	.336	.717	.139	.019
	(10)	(13)	(14)	(37)				
50	2.62	2.21	1.93	2.24	2.602	.087	.343	.118
	(13)	(14)	(15)	(42)				
52	2.15	2.07	2.07	2.10	.059	.943	.055	.003
	(13)	(14)	(15)	(42)				
53	2.08	2.21	2.00	2.10	.284	.754	.120	.014
	(13)	(14)	(15)	(42)				
54	2.00	2.14	2.33	2.17	.728	.489	.190	.036
	(13)	(14)	(15)	(42)				
56	2.23	2.14	1.87	2.07	.846	.437	.204	.042
	(13)	(14)	(15)	(42)				
57	2.08	2.00	2.06	2.05	.029	.972	.038	.001
	(13)	(13)	(16)	(42)				
58	2.08	2.15	2.19	2.14	.053	.948	.052	.003
	(13)	(13)	(16)	(42)				
60	2.31	2.23	2.38	2.31	.173	.842	.094	.009
	(13)	(13)	(16)	(42)				
62	2.00	2.14	2.13	2.09	.181	.835	.094	.009
	(14)	(14)	(16)	(44)				
63	2.21	1.86	2.19	2.09	.943	.398	.210	.044
	(14)	(14)	(16)	(44)				

Analysis of Variance - 3 - groups Performance Bloom's Taxonomy of Educational Objectives

Question	Group 1 $\bar{X}$ Arts & Eng	2 $\bar{X}$ Soc. Sci. & Sociol.	3 $\bar{X}$ Science	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
88	3.15 (13)	3.20 (15)	3.60 (15)	3.33 (43)	1.362	.268	.252	.064
89	3.38 (13)	3.40 (15)	3.67 (15)	3.49 (43)	.667	.519	.180	.032
90	2.23 (13)	2.60 (15)	3.20 (15)	2.70 (43)	3.197	.052	.371	.138
91	3.54 (13)	3.40 (15)	3.67 (15)	3.53 (43)	.408	.668	.141	.020
92	3.62 (13)	3.40 (15)	3.07 (15)	3.35 (43)	1.685	.198	.279	.078
93	3.14 (14)	3.40 (15)	3.64 (14)	3.40 (43)	1.320	.279	.249	.062
94	3.43 (14)	3.07 (15)	3.00 (14)	3.16 (43)	1.137	.331	.232	.054
95	3.36 (14)	3.20 (15)	3.50 (14)	3.35 (43)	.565	.573	.166	.027
96	3.00 (14)	2.80 (15)	31.4 (14)	2.98 (43)	.478	.624	.153	.023
97	3.29 (14)	3.00 (15)	2.79 (14)	3.02 (43)	1.129	.333	.231	.053
98	2.93 (14)	3.00 (15)	2.40 (15)	2.77 (44)	1.795	.179	.284	.081
99	2.57 (14)	3.00 (15)	2.47 (15)	2.68 (44)	1.315	.280	.246	.060
100	2.93 (14)	3.33 (15)	2.67 (15)	2.98 (44)	1.948	.156	.295	.087
101	2.36 (14)	3.00 (15)	2.73 (15)	2.70 (44)	1.538	.227	.264	.070

Analysis of Variance - 3 - groups Items Grouped Under 6 Categories
Bloom's Taxonomy of Educational Objectives - Requirements & Performance

Question	Group 1 $\bar{X}$ Arts & Eng	2 $\bar{X}$ Soc. Sci. & Sociol.	3 $\bar{X}$ Science	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
Req	3.42	3.30	3.68	3.46	1.923	.160	.303	.092
Know	(12)	(15)	(14)	(41)				
Req	3.06	3.13	3.36	3.19	1.301	.284	.253	.064
Com	(12)	(15)	(14)	(41)				
Req	3.08	3.40	3.64	3.39	1.495	.237	.270	.073
App	(12)	(15)	(14)	(41)				
Req	3.28	3.02	3.21	3.16	.547	.583	.167	.028
Ana	(12)	(15)	(14)	(41)				
Req	2.89	3.00	2.55	2.81	1.852	.171	.298	.089
Syn	(12)	(15)	(14)	(41)				
Req	2.71	3.12	2.65	2.83	1.472	.243	.279	.078
Eva	(12)	(13)	(13)	(38)				
Per	2.22	2.10	1.90	2.07	.834	.443	.213	.045
Know	(12)	(13)	(13)	(38)				
Per	2.30	2.11	2.17	2.19	.360	.700	.142	.020
Com	(12)	(13)	(13)	(38)				
Per	2.25	2.00	1.85	2.03	.754	.478	.203	.041
App	(12)	(13)	(13)	(38)				
Per	2.19	2.10	2.23	2.18	.197	.822	.106	.011
Ana	(12)	(13)	(13)	(38)				
Per	2.22	1.87	1.93	1.98	2.452	.102	.360	.129
Syn	(9)	(13)	(14)	(36)				
Per	2.33	2.15	2.25	2.24	.170	.884	.101	.010
Eva	(9)	(13)	(14)	(36)				

Analysis of Variance - 4 - groups Performance Bloom's Taxonomy of Educational Objectives

Question	Group 1$\bar{X}$ Arts & Eng.	2$\bar{X}$ Soc.Sci. & Sociol.	3$\bar{X}$ Science	4$\bar{X}$ Bus.	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
42	2.20 (10)	2.08 (13)	2.00 (15)	2.60 (5)	2.14 (43)	.555	.648	.202	.041
43	2.50 (10)	2.00 (13)	2.07 (15)	2.00 (5)	2.14 (43)	.715	.549	.228	.052
44	2.30 (10)	1.85 (13)	1.53 (15)	1.80 (5)	1.84 (43)	2.508	.073	.402	.162
48	2.00 (10)	1.85 (13)	1.73 (15)	1.60 (5)	1.81 (43)	.645	.591	.271	.047
50	2.54 (13)	2.21 (14)	1.93 (15)	2.80 (5)	2.28 (47)	2.142	.109	.361	.130
52	2.08 (13)	2.07 (14)	2.07 (15)	2.20 (5)	2.06 (47)	.015	.998	.032	.001
53	2.00 (13)	2.21 (14)	2.00 (15)	2.60 (5)	2.13 (47)	.872	.463	.240	.057
54	2.08 (13)	2.14 (14)	2.33 (15)	2.40 (5)	2.21 (47)	.475	.701	.179	.032
56	2.23 (13)	2.14 (14)	1.87 (15)	2.00 (5)	2.06 (47)	.586	.627	.198	.039
57	2.14 (14)	2.00 (13)	2.06 (16)	1.83 (6)	2.04 (49)	.194	.900	.113	.013
58	1.93 (14)	2.15 (13)	2.19 (16)	2.00 (6)	2.08 (49)	.236	.871	.125	.016
60	2.29 (14)	2.23 (13)	2.38 (16)	2.50 (6)	2.33 (49)	.294	.830	.139	.019
62	2.00 (14)	2.14 (14)	2.13 (16)	2.00 (5)	2.08 (49)	.146	.932	.098	.010
63	2.21 (14)	1.86 (14)	2.19 (16)	1.80 (5)	2.06 (49)	.722	.544	.214	.046

Analysis of Variance - 4 - groups Requirement Bloom's Taxonomy of Educational Objectives

Question	Group 1$\bar{X}$ Arts & Eng.	2$\bar{X}$ Soc.Sci. & Sociol.	3$\bar{X}$ Science	4$\bar{X}$ Bus.	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
88	3.15 (13)	32.0 (15)	3.60 (15)	3.40 (5)	3.33 (48)	.791	.505	.226	.051
89	3.38 (13)	3.40 (15)	3.67 (15)	3.40 (5)	3.48 (48)	.486	.694	.179	.032
90	2.23 (13)	2.60 (15)	3.20 (15)	3.00 (5)	2.73 (48)	2.271	.093	.366	.134
91	3.54 (13)	3.40 (15)	3.67 (15)	3.20 (5)	3.50 (48)	.525	.668	.186	.035
92	3.62 (13)	3.40 (15)	3.07 (15)	3.00 (5)	3.31 (48)	1.254	.302	.281	.079
93	3.14 (14)	3.40 (15)	3.64 (14)	3.67 (6)	3.43 (49)	1.151	.339	.267	.071
94	3.43 (14)	3.07 (15)	3.00 (14)	2.67 (6)	3.10 (49)	1.323	.279	.285	.081
95	3.36 (14)	3.20 (15)	3.50 (14)	3.17 (6)	3.33 (49)	.519	.672	.183	.033
96	3.00 (14)	2.80 (15)	3.14 (14)	2.50 (6)	2.92 (49)	.708	.552	.212	.045
97	3.29 (14)	3.00 (15)	2.79 (14)	2.33 (6)	2.94 (49)	1.661	.189	.316	.100
98	2.93 (14)	3.00 (15)	2.40 (15)	2.17 (6)	2.70 (50)	1.663	.188	.313	.098
99	2.57 (14)	3.00 (15)	2.47 (15)	2.17 (6)	2.62 (50)	1.382	.260	.288	.083
100	2.93 (14)	3.33 (15)	2.67 (15)	1.50 (6)	2.80 (50)	5.846	.002	.525	.276
101	2.36 (14)	3.00 (15)	2.73 (15)	1.83 (6)	2.60 (50)	2.393	.081	.367	.135

Analysis of Variance - 4 - groups Items Grouped Under 6 Categories
Bloom's Taxonomy of Educational Objectives - Requirements & Performance

Question	Group 1$\bar{X}$ Arts & Eng.	2$\bar{X}$ Soc.Sci. & Sociol.	3$\bar{X}$ Science	4$\bar{X}$ Bus.	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
Req Know	3.42 (12)	3.30 (15)	3.68 (14)	3.40 (5)	3.46 (46)	1.149	.341	.275	.076
Req Com	3.06 (12)	3.13 (15)	3.36 (14)	3.07 (5)	3.17 (46)	.818	.491	.235	.055
Req App	3.08 (12)	3.40 (15)	3.64 (14)	3.80 (5)	3.43 (46)	1.463	.238	.308	.095
Req Ana	3.28 (12)	3.02 (15)	3.21 (14)	2.93 (5)	3.14 (46)	.512	.676	.188	.035
Req Syn	2.89 (12)	3.00 (15)	2.55 (14)	2.47 (5)	2.78 (46)	1.576	.210	.318	.101
Req Eva	2.71 (12)	3.12 (13)	2.65 (13)	1.67 (3)	2.74 (41)	3.220	.034	.455	.207
Per Know	2.11 (12)	2.10 (13)	1.90 (13)	2.89 (3)	2.10 (41)	1.840	.157	.360	.130
Per Com	2.27 (12)	2.11 (13)	2.17 (13)	2.53 (3)	2.20 (41)	.516	.674	.200	.040
Per App	2.33 (12)	2.00 (13)	1.85 (13)	2.67 (3)	2.10 (41)	1.274	.298	.306	.094
Per Ana	2.19 (12)	2.10 (13)	2.23 (13)	2.33 (3)	2.19 (41)	.206	.892	.128	.016
Per Syn	2.17 (10)	1.87 (13)	1.89 (15)	1.80 (5)	1.94 (43)	1.384	.262	.310	.096
Per Eva	2.25 (10)	2.15 (13)	2.23 (15)	2.30 (5)	2.22 (43)	.070	.975	.073	.005

Analysis of Variance - 6 - groups Performance Bloom's Taxonomy of Educational Objectives

Question	Group 1$\bar{X}$ Arts	2$\bar{X}$ Eng	3$\bar{X}$ Soc Sci	4$\bar{X}$ Soc	5$\bar{X}$ Sci	6$\bar{X}$ Bus	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
42	2.29 (7)	2.67 (3)	2.00 (9)	2.25 (4)	1.93 (14)	2.60 (5)	2.17 (42)	.665	.653	.291	.085
43	2.57 (7)	2.00 (3)	2.22 (9)	1.50 (4)	2.00 (14)	2.00 (5)	2.10 (42)	.795	.559	.316	.100
44	2.29 (7)	2.33 (3)	1.67 (9)	2.25 (4)	1.64 (14)	1.80 (5)	1.88 (42)	1.718	.156	.439	.193
48	2.14 (7)	1.33 (3)	1.78 (9)	2.00 (4)	1.71 (14)	1.60 (5)	1.79 (42)	1.061	.398	.358	.128
50	3.00 (7)	2.17 (6)	2.10 (10)	2.50 (4)	1.93 (15)	2.80 (5)	2.30 (47)	2.468	.048	.481	.231
52	2.29 (7)	2.00 (6)	2.10 (10)	2.00 (4)	2.07 (15)	2.00 (4)	2.09 (47)	.140	.981	.130	.017
53	2.29 (7)	1.83 (6)	2.30 (10)	2.00 (4)	2.00 (15)	2.60 (5)	2.15 (47)	.768	.578	.293	.086
54	2.43 (7)	1.50 (6)	2.10 (10)	2.25 (4)	2.33 (15)	2.40 (5)	2.19 (47)	1.640	.171	.408	.167
56	2.57 (7)	1.83 (6)	2.10 (10)	2.25 (4)	1.87 (15)	2.00 (5)	2.06 (47)	.986	.438	.328	.107
57	2.33 (6)	1.86 (7)	2.00 (10)	2.00 (3)	2.06 (16)	1.83 (6)	2.02 (48)	.268	.928	.176	.031
58	2.83 (6)	1.43 (7)	2.10 (10)	2.33 (3)	2.19 (16)	2.00 (6)	2.13 (48)	1.971	.103	.436	.190
60	2.83 (6)	1.86 (7)	2.30 (10)	2.00 (3)	2.38 (16)	2.50 (6)	2.33 (48)	2.025	.095	.441	.194
62	2.14 (7)	1.86 (7)	2.20 (10)	2.00 (4)	2.13 (16)	2.00 (5)	2.08 (49)	.249	.938	.168	.028
63	2.14 (7)	2.29 (7)	1.80 (10)	2.00 (4)	2.19 (16)	1.80 (5)	2.06 (49)	.468	.798	.227	.052

Analysis of Variance - 6 - groups Requirements Bloom's Taxonomy of Educational Objectives

	Group										
Question	1$\bar{X}$ Arts	2$\bar{X}$ Eng	3$\bar{X}$ Soc Sci	4$\bar{X}$ Soc	5$\bar{X}$ Sci	6$\bar{X}$ Bus	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
88	3.67 (6)	2.71 (7)	3.40 (10)	2.80 (5)	3.60 (15)	3.40 (5)	3.33 (48)	1.725	.150	.413	.170
89	4.00 (6)	2.86 (7)	3.30 (10)	3.60 (5)	3.67 (15)	3.40 (5)	3.48 (48)	2.377	.055	.470	.221
90	2.33 (6)	2.14 (7)	2.70 (10)	2.40 (5)	3.20 (15)	3.00 (5)	2.73 (48)	1.389	.248	.377	.142
91	3.17 (6)	3.86 (7)	3.50 (10)	3.20 (5)	3.67 (15)	3.20 (5)	3.50 (48)	.891	.496	.310	.096
92	3.33 (6)	3.86 (7)	3.40 (10)	3.40 (5)	3.07 (15)	3.00 (5)	3.31 (48)	.981	.441	.323	.105
93	3.43 (7)	2.86 (7)	3.30 (10)	3.60 (5)	3.64 (14)	3.67 (6)	3.43 (49)	1.166	.342	.345	.119
94	3.00 (7)	3.86 (7)	3.20 (10)	2.80 (5)	3.00 (14)	2.67 (6)	3.10 (49)	1.775	.138	.414	.171
95	3.29 (7)	3.43 (7)	3.20 (10)	3.20 (5)	3.50 (14)	3.17 (6)	3.33 (49)	.324	.896	.191	.036
96	3.00 (7)	3.00 (7)	2.80 (10)	2.80 (5)	3.14 (14)	2.50 (6)	2.92 (49)	.406	.842	.212	.045
97	3.29 (7)	3.29 (7)	3.00 (10)	3.00 (5)	2.79 (14)	2.33 (6)	2.94 (49)	.952	.457	.316	.100
98	2.29 (7)	3.57 (7)	2.80 (10)	3.40 (5)	2.40 (15)	2.17 (6)	2.70 (50)	2.642	.036	.481	.231
99	2.43 (7)	2.71 (7)	3.20 (10)	2.60 (5)	2.47 (15)	2.17 (6)	2.62 (50)	1.145	.351	.339	.115
100	2.57 (7)	3.29 (7)	3.40 (10)	3.20 (5)	2.67 (15)	1.50 (6)	2.80 (50)	3.982	.005	.558	.312
101	2.57 (7)	2.14 (7)	3.20 (10)	2.60 (5)	2.73 (15)	1.83 (6)	2.60 (50)	1.808	.131	.413	.170

Analysis of Variance - 6 - groups Items Grouped Under 6 Categories
Bloom's Taxonomy of Educational Objectives - Requirements & Performance

	Group										
Question	1$\bar{X}$ Arts	2$\bar{X}$ Eng	3$\bar{X}$ Soc Sci	4$\bar{X}$ Soc	5$\bar{X}$ Sci	6$\bar{X}$ Bus	Grand $\bar{X}$	F	Sig. of F	Multi. R	Multi. R^2
Req Know	3.83 (6)	3.00 (6)	3.35 (10)	3.20 (5)	3.68 (14)	3.40 (5)	3.46 (46)	2.330	.060	.475	.226
Req Com	2.94 (6)	3.17 (6)	3.20 (10)	3.00 (5)	3.36 (14)	3.07 (5)	3.17 (46)	.665	.652	.277	.077
Req App	3.50 (6)	2.67 (6)	3.30 (10)	3.60 (5)	3.64 (14)	3.80 (5)	3.43 (46)	1.708	.155	.419	.176
Req Ana	3.17 (6)	3.39 (6)	3.07 (10)	2.93 (5)	3.21 (14)	2.93 (5)	3.14 (46)	.380	.859	.213	.045
Req Syn	2.72 (6)	3.06 (6)	3.00 (10)	3.00 (5)	2.55 (14)	2.47 (5)	2.78 (46)	1.061	.396	.342	.117
Req Eva	2.57 (7)	2.90 (5)	3.28 (9)	2.75 (4)	2.65 (13)	1.67 (3)	2.74 (41)	2.318	.064	.499	.249
Per Know	2.43 (7)	1.93 (5)	2.19 (9)	1.92 (4)	1.90 (13)	2.89 (3)	2.13 (41)	1.748	.150	.447	.200
Per Com	2.60 (7)	1.88 (5)	2.13 (9)	2.05 (4)	2.17 (13)	2.53 (3)	2.21 (41)	1.390	.252	.407	.166
Per App	2.57 (7)	1.80 (5)	2.22 (9)	1.50 (4)	1.85 (13)	2.67 (3)	2.07 (41)	1.599	.186	.431	.186
Per Ana	2.43 (7)	1.87 (5)	2.19 (9)	1.92 (4)	2.23 (13)	2.33 (3)	2.19 (41)	.929	.474	.342	.117
Per Syn	2.33 (6)	2.00 (3)	1.80 (10)	2.11 (3)	1.93 (14)	1.80 (5)	1.96 (41)	1.694	.162	.441	.195
Per Eva	2.67 (6)	1.67 (3)	2.10 (10)	2.33 (3)	2.25 (14)	2.30 (5)	2.24 (41)	1.065	.395	.363	.132

Appendix D Interview Data

Question 1.b. asked why the particular textbook was selected.

These comments were given after use of the textbook although three lecturers did not know why the textbook had been selected. Lecturer B had helped to choose the textbook.

Comments on the book used in 1985 were:

Lecturer A. precise, condensed, easier writing style

Lecturer B. comprehensive coverage of essential topics, clear presentation, some psychological aspects

Lecturer C. well-organized, minimum of jargon, language suitable to students' level

Lecturer D. simple, interesting, contains diagrams

Question 2. asked the percentage of other readings in references and journals required and the purpose of the assignments.

Lecturers were not sure of percentages but indicated approximate usage

of various types of readings.

Lecturer A:

journal articles (some use) These contained empirical findings to support a theoretical model or give case studies to illustrate.

purpose: to concretize understanding.

reference books (optional) These helped in understanding a topic or concept.

purpose: to clarify concepts if the textbook did not make them clear enough.

newspaper articles (some use) These related to tutorial projects.

purpose: to give information.

Lecturer B:

journal articles (some use) These two or three articles on a topic gave different view points which were discussed by students. Although there was a language problem, it was worthwhile.

purpose: to give the feel of academic work.

Lecturer C:

journal articles (frequent use)
newspaper articles (some use)

purpose: to show other viewpoints on a concept.

literature: short stories, drama, (frequent use) Some of these were read in Chinese.

purpose: to show portrayal of social theories.

Lecturer D:

reference books, journal articles, videotapes (some use) for tutorials, projects.

purpose: to have students write a term paper.

reference books (some use) These were used for group experiments.

purpose: to give guidelines for field projects.

Lecturer E:

reference books (great frequency)

journal articles (frequent use)

newspaper articles (frequent use)

purpose: to show social institutions in east and west.
to give information for discussion.

special readings, such as the Sino-British Joint Declaration on Hong Kong's future (some use) These were read in English and Chinese versions.

purpose: to understand future institutions in Hong Kong.

Question 7. asked if the help given to weak students was adequate.

Of the five lecturers, three replied that the help was inadequate, one that it was adequate, and one was not asked the question as the interview took place several months earlier than the others and the question was not on the previous interview list.

Help was not adequate:

1. Students were asked to see the lecturer after the midterm test if their performances were poor. Mainly poor students came, but the poorest ones did not. The lecturer did not have time to give intensive tutoring throughout the term.
2. Students did not come for help although it was always available. Weak students were very quiet in tutorials where some help was given.
3. The class size was too big for the lecturer to be able to give enough help. The students could not become acquainted with the lecturer in such large classes and therefore did not seek help.

Help was adequate:

1. The students should take the initiative. If students did not seek help, it might show apathy which does not mean lack of ability. The problem of apathy is very comples.

While this lecturer stated that the help was adequate, in actuality students largely did not seek help, the lecturer further stated, and were not helped.

Question 10. asked the comments

One lecturer commented that some of the writing in the subject was allowed to be in Chinese. Mostly group projects were written in Chinese. About 25 - 30% of the students chose to write their papers in Chinese.

One lecturer said standards were lower for non-major students, while another lecturer maintained the same standards for all students to keep the integrity of the discipline.

Remedial Reading Programme

The texts used in the programme were,

Long, Michael et.al. 1980. Reading English for Academic Study, Rowley, Mass.: Newbury House. (REAS)

Moore, John, ed. 1980. Discourse in Action, V.4. Reading and Thinking in English. Oxford: Oxford University Press.

---------------- 1979. Discovering Discourse, V.3. Reading and Thinking in English. Oxford: Oxford University Press. (DD)

SRA Rate Builders. 1963. SRA Reading Laboratory IIIa, IIIb, Chicage, Ill.: Science Research Associates.

McCord, Clarence. 1982. Computer programmes for reading. Hong Kong: Hong Kong Baptist College. unpublished.

Free reading texts included:

Costa, Greg. 1983. American Short Stories. New York: Harcourt Brace Jovanovich.

Felder, Mira B. and Anna Bryks Bromberg. 1979. Light and Lively, A Reader. New York: Harcourt Brace Jovanovich.

Hendrickson, James M. and Angela Labarca, 1979. The Spice of Life. New York: Harcourt Brace Jovanovich.

Kenan, Lucette Rollet. 1982. A Changing Scene. New York: Harcourt Brace Jovanovich.

Kenan, Lucette Rollet. 1975. Modern American Profiles. New York: Harcourt Brace Jovanovich.

The South China Morning Post. Hong Kong.

Newsweek. Newsweek International.

TV Times. Hong Kong.

Appendix _____ Summary Charts of Remedial Reading Programme

Week	Class	Structured Lab	Free Lab
1.	Definition of reading as communication. Eye Fixation exercise. On 'Rice' form main idea.	NONE	NONE
2.	NONE	SRA Rate Builders to find students' levels.	1/2 period of free reading.
3.	On 'Korea' and 'Thorseth' Topic sentence does not tell all. Tone and colloquial language. Opinions on the Sino-British Joint Declaration on Hong Kong's Future.	Rate Builders REAS 1 Exs. A,B,C (Reading English for Academic Study).	Homework: REAS 1 Exs. D, E,F. Computer Lab: READ 1 or free reading.
4.	Essay on China's Urban Policy - Give best title as in REAS	Rate Builders REAS 1 Exs. G,H.	Homework: Finish REAS 1 Exs. Computer Exs. or free reading
5.	Main Ideas exercise using students' own textbooks: They were grouped when possible. several lecturers circulated to help them.	Rate Builders REAS3 Exs. A,B,C.	Homework: REAS 3 Exs. D,E,F. Computer or free reading.
6.	Discovering Discourse Unit 1 Activities 1 - 3.	Rate Builders REAS 3 Exs. G, H.	Homework: REAS 3 Exs. H, I. Computer or free reading.

Appendix _____ Summary Charts of Remedial Reading Programme

Week	Class	Structured Lab	Free Lab
7.	DD1 Activities 4 - 6. Puzzle Passage on Survey on Joint Declaration	Rate Builders DD1 Activities 7 - 9.	Homework: DD1 Part 5 q. 2ab, 3:1 - 5b, 3:1 - 11 Computer or free reading
8.	NONE	Some labs for a half-period of free reading	No Homework. Some did Computer or free reading.
9.	Discussed Puzzle Passage on Joint Declaration REAS 2 Exs. A,B Skimming exercise on textbooks or magazines.	Some labs Rate Builders	Homework: DD2 q.8 - 15 REAS 2 Exs. C,D. Skimming Exs. Finish 10 questions.
10.	DD2, Activities 2, 3 Puzzle Passage on Labour Camps in China. (recap Main Idea)	Rate Builders REAS 2 Exs E,F,G.	Homework: REAS 2 Exs. H,I. Finish Skimming Ex.
11.	DD2, Activities 3,4 Star Wars Passage guessing vocabulary from context. Main idea and structure.	Rate Builders REAS Appendix B Prefixes, suffixes roots exercise in Discourse in Action.	Homework: Finish prefixes, etc. exs.

Appendix _____ Summary Charts of Remedial Reading Programme

Week	Class	Structured Lab	Free Lab
12.	DD2 Activities 5,6 Space Shuttles passage vocabulary guessing Main idea Skimming to find words	Rate Builders completed 35-50 Used textbooks to find words with REAS Appendix affixes & roots or unknown words and guess meaning	Homework: DD2 q.4 - 8
13.	Discussed Labour Camps passage Passage on Arthur Miller's Death of a Salesman in Peking vocabulary guessing main idea	NONE	NONE

Appendix ____. Detailed Analysis of Cognitive Skills in Bloom's Taxonomy Used in the Past Remedial Reading Programme

1. Reading English for Academic Study (Michael Long et.al.)

Reading Skills	Cognitive Skills	(Question)
Unit 1 exercises		
Skimming, especially topic sentences to gain an idea of the context	Comprehension II	(91)
Understanding reference words		
Locating factual and other information		
Practicing comparison structures used in the text		
Extracting information from a graph	Comprehension I	(90)
Using conditional sentences, emphasizing prediction	Knowledge I	(88)
Using word forms		
Selecting suitable words for the context		
Unit 2 exercises		
Guessing the meaning of vocabulary from context		
Guessing vocabulary to fit in context		
Understanding reference words		
Deciding the main idea of a paragraph	Comprehension II	(91)
Using words which express certainty or probability		
Deciding cause and effect	Knowledge I	(88)
Matching exercise on factual information		
Putting a sequence of events into chart form	Comprehension I	(90)
Using word forms		
Selecting suitable words for the context		

Reading Skills	Cognitive Skills (Question)
Unit 3 - exercises	
Skimming for specific information	
Understanding reference words	
Putting a sequence of events into chart form	Comprehension I (90)
Choosing ways to express causal relationships	Knowledge I (88)
Matching causes and effects	Knowledge I (88)
Extracting information from a bar graph	Comprehension I (90)
Using word forms	
Selecting suitable words for the context	
2. Discovering Discourse vol. 3 of Reading and Thinking in English	
Unit 1	
Understanding symbols	
Guessing the meaning of vocabulary from context	
Predicting content	Comprehension II (91)
Purpose in reading, giving emphasis to aspects of the content	Comprehension II (91)
Unit 2	
Distinguishing between generalizations and specific information	
Guessing the meaning of vocabulary from context	Analysis I (94)
Putting general and specific information into chart form	Comprehension I (90)

Reading Skills	Cognitive Skills	(Question)
Dividing sentences in a paragraph to find general and specific information	Analysis I, II	(94, 95)
Writing a summary of the paragraph	Comprehension II	(91)
Discovering several levels of generality, frequency, quantity		
Interpreting diagrams	Comprehension I	(90)
Understanding reference words		

3. Discourse in Action, vol. 4 of Reading and Thinking in English

Locating words with affixes, and roots given in the appendix of Reading English for Academic Study

The level of the text was too difficult for remedial reading students, and little use could be made of the text.

4. SRA Rate Builders

Increase of reading speed		
Understanding of the main idea of the passage	Comprehension II	(91)
Locating of factual information		

5. Computer Programmes by McCord

Eye-movements to lengthen saccade		
Speed reading		
Comprehending the main idea	Comprehension II	(91)
Guessing the meaning of vocabulary from context		

6. Free Reading

Gaining wider experience in reading		
Reading for interest		
Understanding the main idea of the passage	Comprehension II	(91)

7. Paragraphs and Essays Prepared for the Programme

Reading Skills	Cognitive Skills	(Question)
a. Eye-fixation exercises		
Explaining eye movements and encouraging grouping of words for reading speed and comprehension		
b. Paragraph on Rice		
Understanding the main idea of the passage	Comprehension II	(91)
c. Paragraph on Korea		
Finding that the topic sentence does not explain the main idea of the passage	Comprehension II	(91)
Understanding subtlety of meaning	Comprehension III	(92)
d. Paragraph on Thorseth		
Understanding the topic sentence	Comprehension III	(92)
Understanding the tone and colloquial language	Comprehension III	(92)
e. Opinions on the Sino-British Joint Declaration		
Understanding the viewpoint and reasons for the opinions	Comprehension II, III	(91, 92)
f. Essay on China's Urban Policy		
Understanding the main idea of the passage	Comprehension II	(91)
Locating specific information		
Understanding coherence devices		
g. Essay on Survey on Joint Declaration Puzzle cut into pieces by paragraphs		
Understanding the organizational method of a reading passage	Analysis III	(96)
Understanding the relationships of parts of a reading passage	Analysis II	(95)

Reading Skills	Cognitive Skills	(Question)
Understanding the main idea of the passage	Comprehension II	(91)
Evaluating the correctness of the content	Evaluation II	(101)
Understanding inferences	Comprehension III	(92)
h. Essay-Puzzle Passage on Labour Camps in China as Reported by Amnesty International		
Understanding the organizational method of the reading passage	Analysis III	(96)
Understanding the relationships of parts of the reading passage	Analysis II	(95)
Understanding the main idea of the passage	Comprehension II	(91)
Guessing the meaning of vocabulary in context		
i. Essay on Star Wars - Strategic Defense Initiative		
Understanding the main idea of the passage	Comprehension II	(91)
Understanding the organizational method of the reading passage	Analysis III	(96)
Guessing the meaning of vocabulary in context		
j. Essay on Space Shuttles		
Skimming to find words		
Guessing the meaning of vocabulary in context		
Understanding the main idea of the passage	Comprehension II	(91)

Reading Skills	Cognitive Skills	(Question)
k. Essay on Arthur Miller's *Death of a Salesman* in Peking		
Skimming to find words		
Guessing the meaning of vocabulary in context		
Understanding the main idea of the passage	Comprehension II	(91)
Understanding the organizational method of the reading passage	Analysis III	(96)
Understanding inferences of statements on cultural differences	Comprehension III	(92)

BIBLOGRAPHY

Adams, M. and A. Collins. 1977. A Schema Theoretic View of Reading. Technical Report 32. Center for the Study of Reading. University of Illinois, Urbana. Microfiche.

Adams-Smith, Diana E. 1986. Study Modes: Facilitating Progress from Teacher Dependence to Self-Directed Learning. In *ESP in Practice*, ed. P. W. Peterson. Washington, D.C.: USIA.

Allen, J. P. B., and H.G. Widdowson. 1978. *English in Social Studies*. Oxford: Oxford University Press.

Anderson, M. S. 1982. *The Ascendancy of Europe: Aspects of European History 1815-1914*. London: Longman.

Anderson, R. C. 1977. The Notion of Schemata and the Educational Enterprise. In *Schooling and the Acquisition of Knowledge*, eds. R. C. Anderson, R. J. Spiro, and W. Montague, Hillsdale, N.J.: Lawerence Erlbaum.

Athey, Irene. 1976. Developmental Processes and Reading Processes. In *Theoretical Models and Processes of Reading*, 2nd ed., eds. H. Singer and R. B. Ruddell. Newark, Del.: I. R. A.

Beaugrande, R. de. 1981. Design Criteria for Process Models of Reading. *Reading Research Quarterly* 16: 261-315.

Beaugrande, R. de and W. Dressler, 1981. *Introduction to Text Linguistics*. London: Longman.

Blair-Broeker, L. 1980. The Years Alone: A Reading Comprehension Unit (7-9). Area Education Agency 7, Cedar Falls, Iowa. Iowa Teacher Center.
Microfiche.

Bloom, B. S. et. al., eds. 1956. *Taxonomy of Educational Objectives: Handbook I: Cognitive Domain*. New York: David Mckay.

Bowen, J. D., ed. 1963, *Techniques and Procedures in Second Language Teaching*. Philippine Center for Language Study Monograph no.3. Quezon City: Alemar-Phoenix Publishing House.

Bullock, A. 1975. *A Language for Life*. Report of the Committee of Inquiry, Department of Education and Science. London: H.M.S.O.

Carrell, P. L. 1984a. The Effects of Rhetorical Organization on ESL Readers. *TESOL Quarterly* 18: 441-69.

Carrell, P. L. 1984b. Schema Theory and ESL Reading: Classrooms Implications and Applications. *Modern Language Journal* 68: 332-43.

Carroll, J. B. 1977. Developmental Parameters of Reading Comprehension. In *Cognition, Curriculum, and Comprehension*, ed. J. T. Guthrie. Newark, Del.: I.R.A.

Chellapan, K. 1985. Language Through Science and Science Through Language: An Integrated Approach, Paper presented at Twentieth Regional Seminar, SEAMEO Regional Language Centre, Singapore, April 1985.

Cheng, W. 1981. The Teaching of English in Hong Kong. School of Education. Chinese University of Hong Kong. Unpublished paper.

Cheung, Y.S. 1984. Readability and Reading comprehension. Hong Kong: Alpha Educational Books.

Chomsky, N. 1975. Reflections on Language. New York: Pantheon Books.

Coady, J. 1979. A Psycholinguistic Model of the ESL Reader. In Reading in a Second Language, eds. R. Mackay, B. Barkham, and R. R. Jordan. Rowley, Mass.: Newbury House.

Covington, H. C. and T. Tiballi. 1982. Using Bloom's Taxonomy for Precision Planning and Creative Teaching in the Developmental Math Classroom. Paper presented at the Annual Conference of the Western College Reading Association, San Diego, Cal. April 1982. Microfiche.

Croft, K. 1960. Reading and Word Study for Students of English as a Second Language: High Intermediate Level. Englewood Cliffs, N. J.: Prentice-Hall.

Cummins, J. 1977. Cognitive Factors Associated with the Attainment of Intermediate Levels of Bilingual Skills. Modern Language Journal 61: 3-12.

Cummins, J. 1980. The Cross-Lingual Dimensions of Language Proficiency: Implications for Bilingual Education and the Optimal Age Issue. TESOL Quarterly 14: 175-87.

Downing, J. and C. K. Leong. 1982. Psychology of Reading. New York: Macmillan.

Educational Services in ESL. 1953. Reading Selections for Students of English as a Second Language. Washington, D.C.: Educational Services.

Frederiksen, C.H. 1975. Representing the Logical and Semantic Structure of Knowledge Acquired from Discourse, Cognitive Psychology 7: 371-457.

Gallagher, J. M. and D. K. Reid. 1981. The Learning Theory of Piaget and Inhelder. Monterey, Cal.: Brooks/Cole.

Gibson, E. J. and H. Levin. 1975. The Psychology of Reading. Cambridge: Mass.: MIT Press.

Goodman, K. S. 1967. Reading: A Psycholinguistic Guessing Game. Journal of the Reading Specialist 259-264, 266-271.

Gray, W. S. 1969. The Teaching of Reading and Writing. Paris: UNESCO.

Grellet, F. 1981. Developing Reading Skills. Cambridge: Cambridge University Press.

Harman, D. 1970. Illiteracy, An Overview. Harvard Educational Review 40: 226-44.

Heyworth, R. 1983. Concrete Thinking Abilities Among Hong Kong Junior Secondary School Pupils. The Chinese University Education Journal 11: 27-35.

Hill, P. W. and B. McGaw. 1981. Testing the Simplex Assumption Underlying Bloom's Taxonomy. American Educational Research Journal 18: 93-101.

Hochberg, Julian. 1976. Toward a Speech-plan Eye Movement Model of Reading. In Eye Movements and Psychological Processes, eds. R. A. Monty and J. W. Senders. Hillsdale, N. J.: Lawrence Erlbaum.

Horodezky, B. 1983. Professors' Views on Basic Concepts and Reading Skills Essential for College Success. Paper presented at the Annual Meeting of the International Reading Association, Anaheim, Cal., May 1983. Microfiche.

Houghton, D. and M. Hoey, 1983. Contrastive Rhetorics. Annual Review of Applied Linguistics. Rowley, Mass.: Newbury House.

Huey, E. B. 1908. The Psychology and Pedagogy of Reading. reprint Cambridge, Mass.: MIT Press, 1968.

Johns, A.M. 1981. Necessary English: A Faculty Survey. TESOL Quarterly 15: 51-57.

Kaplan, R. B. 1966. Cultural Thought Patterns in Intercultural Education. Language Learning 16: 1-20.

Kintsch, W. and T. A. van Dijk. 1978. Toward a Model of Text Comprehension and Production. Psychological Review 85: 363-94.

Kvan, E. 1969. Problems of Bilingual Milieu in Hong Kong. In Hong Kong: A Society in Transition, eds. I. C. Jarvie and J. Agassi. London: Routledge and Kegan Paul.

Langer, J. A. 1984. Examining Background Knowledge and Text Comprehension. Reading Research Quarterly 19: 468-81.

Langer, J. A. 1986. Learning Through Writing: Study Skills in the Content Areas. Journal of Reading 29: 400-406.

Lindquist, A. A. 1982. Applying Bloom's Taxonomy in Writing Reading Guides for Literature. Journal of Reading 25: 768-74.

Long, M. et. al. 1980. Reading English for Academic Study. Rowley, Mass.: Newbury House.

Lord, R. 1974. English - How Serious a Problem for Students of Hong Kong, The English Bulletin 6: 1-10.

Mackay, R., and A. Mountford, eds. 1978. English for Specific Purpose. London: Longman.

Macrae, A. 1978. Comprehension: The Psycholinguistic View: In The Teaching of Comprehension. London: British Council.

Meyer, B. J. F. 1977. The Structure of Prose: Effects on Learning and Implications for Educational Practice. In Schooling and the Acquistion of Knowledge, eds. R. C. Anderson and R. J. Spiro, Hillsdale, N. J.: Lawrence Erlbaum.

Meyer, B. J. F. 1984. Organizational Aspects of Text: Effects on Reading Comprehension and Applications for the Classroom. In Promoting Reading Comprehension, ed. J. Flood. Newark, Del.: I.R.A.

Meyer, B. J. F., D. M. Brandt, and G. J. Bluth. 1980. Use of Top-level Structure in Text: Key for Reading Comprehension of Ninth-grade Students. Reading Research Quarterly 16: 72-103.

Moates, D. R. and G. M. Schumacher. 1980. An Introduction to Cognitive Psychology. Belmont, Cal.: Wadsworth.

Mohan, B. A. 1979. Relating Language Teaching and Content Teaching. TESOL Quarterly 13: 171-182.

Mohan, B. A. 1985. An Integrated Model on Language and Content Learning. Paper presented at the Twentieth Regional Seminar, SEAMEO Regional Language Centre, Singapore, April 1985.

Mohan, B. A. 1986. Language and Content. Reading, Mass.: Addison-Wesley.

Moore, J. 1979. Discovering Discourse. Book 3 of the Reading and Thinking series. London: Oxford University Press.

Moore, J. 1980. Discourse in Action. Book 4 of the Reading and Thinking series. London: Oxford University Press.

Munby, J. 1978. Communicative Syllabus Design. Cambridge: Cambridge University Press.

Nuttall, C. 1982. Teaching Reading Skills in a Foreign Language. London: Heinemann.

Ostler, S. E. 1980. A Survey of Academic Needs for Advanced ESL. TESOL Quarterly 14: 489-502.

Payne, D. A. 1974. The Assessment of Learning: Cognitive and Affective. Lexington, Mass.: D. C. Heath.

Piaget, J. 1928. Judgment and Reasoning in the Child. reprint London: Routledge and Kegan Paul, 1969.

Pierson, H. D. and J. Fredericks. 1980. Developing an English as a Second Language Programme at the Tertiary Level: The Early Stages, The Chinese University Education Journal 8: 62-69.

Resnick, D. P. and L. B. Resnick. 1977. The Nature of Literacy - an Historical Exploration. Harvard Educational Review 47: 370-86.

Richgels, D. J. 1982. Schema Theory,Linguistic Theory, and Respresntations of Reading Comprehension. Journal of Educational Research 76: 54-62.

Richterich, R. 1983. Case Studies in Identifying Language Needs. Oxford: Pergamon Press.

Ridout, R. 1948. English Today, Book 5. London: Ginn.

Ruddell, R. B. 1976. Language Acquisition and the Reading Process. In Theoretical Models and Processes of Reading, 2nd ed., eds. H. Singer and R. B. ruddell. Newark, Del.: I.R.A.

Rumelhart, D. E. 1980. Schemata: the Building Blocks of Cognition. In Theoretical Issues in Reading Comprehsnsion, eds. R. J. Spiro, B. C. Bruce, and W. F. Brewer, Hillsdale, N.J.: Lawrence Erlbaum.

Rumelhart, D. E. and A. Ortony. 1977. The Representation of Knowledge in Memory. In Schooling and the Acquisition of Knowledge, eds. R. C. Anderson, R. J. Spiro, and W. E. Montague. Hillsdale, N. J.: Lawrence Erlbaum.

Schank, R. C. 1972. Conceptual Dependency: A Theory of Natural Language Understanding. Cognitive Psychology 3: 552-631.

Shoemaker, C. 1983. English Needs of Community College Students: A Faculty Survey. Paper presented at the Midwest Regional Conference on English in Two Year Colleges. Kansas, Feb. 1983. Microfiche.

Siu, P. K. et. al. 1979. The Effects of the Medium of Instruction on Student Cognitive Development and Academic Achievement. Final Report. Chinese University of Hong Kong, School of Education. Unpublished report.

Skinner, D. C. 1985. Access to Meaning: The Anatomy of the Language /Learning Connection. Journal of Multilingual and Multicultural Development 6: part I, 97-116; partII, 369-88.

Smith, F. 1978a. Reading. London: Cambridge. University Press.

Smith, F. 1978b. Understanding Reading, 2nd ed. New York: Holt, Rinehart, Winston.

Snelbecker, G. G. 1974. Learning Theory, Instructional Theory and Psychoeducational Design. New York: McGraw Hill.

Spiro, R. J. 1980. Constructive Processes in Prose Comprehension and Recall. In Theoretical Issues in Reading Comprehension, eds. R.J. Spiro, B. C. Bruce, and W. F. Brewer. Hillsdale, N. J.: Lawrence Erlbaum.

Stern, H. H. 1983. Fundamental Concepts of Language Teaching. London: Oxford University Press.

Strevens, Peter. 1977. New Orientations in the Teaching of English. Oxford: Oxford University Press.

Swain, M. 1985. Two Ingredients to the Successful use of a Second Language as a Medium of Instruction in Hong Kong. Paper presented at the Second Annual Conference of the Hong Kong Educational Research Association, University of Hong Kong, November 1985.

Swain, M. and J. Cummins. 1982. Bilingualism, Cognitive Functioning and Education. In Surveys I, ed. V. Kinsella. Cambridge: Cambridge University Press.

Tickoo, M. L. 1985. English Across the Curriculum in Two Universities: Communicational Technique or Enriched Tradition? Paper presented at the Twentieth Regional Seminar, SEAMEO Regional Language Centre, Singapore, April 1985.

Tinker, M. A. 1958. Recent Studies of Eye Movement in Reading. Psychological Bulletin 55: 215-31.

Trim, J. L. M., R. Richterich, J. A. van Ek, and D. A. Wilkins. 1980. Systems Development in Adult Language Learning. Oxford: Pergamon Press.

UNESCO. 1953. World Illiteracy at Mid-century: A Statistical Study. Monograph on Fundamental Education, no.11. reprint Westport, Conn.: Greenwood, 1970.

van Dijk, T. A. and W. Kintsch. 1983. Strategies of Discourse Comprehension. New York: Academic Press.

Venezky, R. L. 1970. The Structure of English Orthography. The Hague: Mouton.

Venezky, R. L. 1976. Theoretical and Experimental Base for Teaching Reading. The Hague: Mouton.

Vygotsky, L. S. 1962. Thought and Language Cambridge, Mass.: MIT Press.

Widdowson, H. G. 1979. Explorations in Applied Lingusitics. Oxford: Oxford University Press.

Zemelman, S. 1978. Writing in Other Disciplines: A Questionnaire for Teachers. Conference on Language Attitudes and Composition Newsletter (Portland, Oregon, State University) 5: 12-16. Cited in Johns 1981.